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STATE BOARD OF FORESTRY

BULLETIN No. 3

G. MORRIS HOMANS, State Forester

In cooperation with the Forest Service U. S. Department of Agriculture
HENRY S. GRAVES, Forester

WOOD-USING INDUSTRIES OF CALIFORNIA

ANDREW K. ARMSTRONG

Engineer in Timber Tests



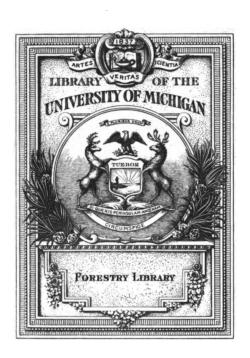
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ANDREW K. ARMSTRONG
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THE WOOD-USING INDUSTRIES OF CALIFORNIA.*

INTRODUCTION.

This study of the wood-using industries of California was undertaken with two main objects in view:

- 1. The determination of the kinds and amounts of wood demanded by the industries manufacturing finished products, with particular reference to the amount produced in the State. This is intended to be an aid toward the adoption of a rational state forest policy, inasmuch as it shows what kinds of woods ought to be produced for home consumption.
- 2. The dissemination of information to the buyers and sellers of wood in the State.

Accordingly, this publication covers only the woods worked up into finished products within the borders of California, disregarding cross ties, lath, mining timbers, shingles, telegraph and telephone poles, rough lumber used in building operations and other structural work, and dressed lumber, manufactured elsewhere, which is used in the State without further preparation.

PRODUCTION OF LUMBER IN CALIFORNIA.

The last available returns of the United States Census, taken in 1910, show that in the production of lumber California ranked fourteenth in the list of forty-five states. Her 252 mills, in that year, produced 1,254,826,000 feet, board measure, or 3.1 per cent of the total cut of the United States. The composition of this total was as follows:

Species.	Number of mills.	Feet, board measure.	Value.
Redwood	67	543,493,000	\$8,435,011
Western yellow pine	166	399,067,000	6,001,968
Douglas fir	85	103,169,000	1,419,605
Sugar pine	81	101,561,000	1,901,221
White fir	66	65,120,000	780,789
Incense cedar	59	20,846,000	266,829
Spruce	34	14,105,000	208,049
Oak	13	4,376,000	187,424
Hemlock	1 1	2,723,000	26,958
Ash	4	206,000	10.300
All others		160,000	

^{*}The study upon which this report is based was undertaken by the State of California in coöperation with the Forest Service, the work being done under the direction of C. Stowell Smith, Assistant District Forester, Forest Service, United States Department of Agriculture. The statistics were compiled from data collected during a period of about one year, beginning August 1, 1910. By the terms of the coöperative agreement, the State is authorized to publish the findings of the investigation.

Further statistics may be found in the publication "Lumber, Lath and Shingles, 1910," compiled by the Department of Commerce and Labor, Bureau of the Census, in cooperation with the Forest Service, which is referred to both here and elsewhere in this publication.

KINDS OF WOODS USED.

California manufacturers report the use of 63 species of wood; and, in 1910, they consumed 662 million feet, or 35 per cent of the total cut of the State, in producing their commodities. Twelve species were logged wholly within the State, five partly within, and the remaining 46 wholly without. Of the latter, 24 were grown in foreign countries, including the Philippine and Hawaiian islands.

A list of these woods with their common and botanical names and other information, is given in Table I; while a short discussion upon the California grown species is given below.

REDWOOD.

Although redwood grows also in southwestern Oregon, the lumber is exclusively produced within the borders of California by 67 mills, whose average cut each for 1910 was about 8,112,000 feet board measure. In the latter year redwood ranked twelfth in the amount of lumber produced within the United States.

The redwood belt extends in a strip 500 miles long, from southern Oregon to central California. The strip is narrow, ranging in width from 10 to 30 miles. The commercial range has been estimated to cover 3,000 square miles, but the dense logging woods cover a much smaller area than that. The heaviest stand is near the center of the redwood region, in Humboldt County, though very dense forests exist both north and south of that point.

Redwood is one of the few soft woods that reproduce bountifully from sprouts. Few trees surpass it in that particular, and the vigor of the sprout growth is remarkable. A large portion of the forest is renewed in that way and the largest trees retain their ability to send up shoots from the stump.

The height that the tree attains commonly varies between 180 and 280 feet, and the diameter between 6 and 12 feet.

The wood is light, soft, brittle, and moderately strong; the grain usually fine, even and straight, though sometimes curly; the color light to dark red, with thin, almost white, sapwood. It splits and works easily, and polishes well; and is very durable in contact with the soil.

Its good qualities are well known abroad and in the east, as in 1907, over 47 million feet of it were shipped to Australia and other oriental ports, South and Central America, Mexico, the United States, Atlantic ports, Europe, Africa, and the Hawaiian Islands. This amount includes water shipments only, as other parts of the United States are supplied by rail from San Francisco and Los Angeles.

PLATE I. Interior of box factory, showing finished sides, tops and bottoms of boxes and crates.

A great deal of interesting information on redwood, the cedars, and cypress of the United States, may be found in Forest Service Bulletin No. 95, from which some of the information in this publication has been drawn.

WESTERN YELLOW PINE.

Western yellow pine grows in many of the western states, but in the production of lumber from this species California ranks first, with 25.5 per cent of the total cut of 1910. In the latter year this pine ranked sixth in the amount of lumber produced within the United States, being exceeded only by southern yellow pine, Douglas fir, oak, white pine, and hemlock.

The total stand of this species in the United Staes, in 1909, has been estimated at 275 billion feet board measure: of which over 30 billion feet of live saw timber grew on the National Forests within the State, and over 13 billion on private holdings. The species is gaining ground within its range.

It occurs in the northern part of California, extending southward in the coast ranges and Sierra to the southern cross ranges. In the northern Sierra it is found at its best development from 2,000 to 5,000 feet above sea level, and in the southern Sierra mainly at elevations of from 4,500 to 8,000 feet.

The height that the tree attains commonly varies between 100 and 200 feet, and the diameter between 3 and 7 feet.

The wood of the yellow pine varies greatly; in one locality alone four kinds of trees are distinguished. The wood is rather heavy as compared with that of sugar pine; is hard, fairly strong, sometimes brittle, and, usually, very resinous. The heartwood is reddish brown in color, and the sapwood (often very thick) yellowish white. The sapwood from certain trees is very light and non-resinous. When finished it has a satiny luster, and is equal to sugar pine for finishing purposes.

It is extensively used for building materials, such as scantling, beams, etc., railroad ties, and for the purposes mentioned later in this report. Small trees 6, 8, and 10 inches in diameter, are used for mine props, although the wood is not durable in an untreated condition.

Those desiring more detailed information upon this species and other pines grown in the United States, should secure Forest Service Bulletin No. 99.

DOUGLAS FIR.

Douglas fir, in 1910, ranked second in the amount of lumber produced in the United States. Although California ranks third in the production of Douglas fir lumber, only 2 per cent of the total amount produced is cut within the State.

This species (called also red fir, Douglas spruce, and Oregon pine) is the only one of the Sierra species that occurs also in the redwood

belt. It is found in the northern mountains of the State, and southward to the San Joaquin River; occurring in the coast ranges to the Santa Lucia Mountains. About 40 per cent of the Douglas fir cut in California comes from the redwood belt. Of the 24 billion feet of live saw timber of this species, growing in the National Forests within the State, 19 billion occur in the Coast ranges and the remainder in the Sierra.

The height that the tree attains commonly varies between 150 and 180 feet, and the diameter between 3 and 6 feet.

The wood is strong and hard, not very heavy, and fairly durable. The grain is straight, but varies from very fine to very coarse. Its great strength gives it a value for bridge timbers and heavy construction work, and its durability renders it useful for railroad ties, mine props, etc. Very little Douglas fir lumber is shipped, as most of it is consumed locally.

The Sierra Douglas fir is generally sound, but low in its content of clear lumber. The bole is comparatively short and tapering, and this, combined with an ill-pruned trunk, results in a high proportion of knotty lumber.

A full discussion of Douglas fir, covering its properties and uses, is to be found in Forest Service Bulletin No. 88.

SUGAR PINE.

Sugar pine, in 1910, ranked twenty-fifth in the amount of lumber produced in the United States. It is cut only in two states, Oregon and California; and in 1910 the latter produced 98.4 per cent of the total cut.

The range of the species in California extends from the northern to the southern border in the Sierra, and on the Coast ranges south to Lake County. The total stand of live saw timber on the National Forests within this region is about 14 billion feet, with about 7 billion additional in private holdings.

The height that the tree attains commonly varies between 160 and 180 feet, and the diameter between 4 and 7 feet.

The wood is very light, soft and not strong; the grain coarse and straight. It is generally very resinous, with large and conspicuous resin ducts. The heartwood is light brown in color, while the sapwood is yellowish white. When finished the wood has a satiny luster, that renders it excellent for interior finishing.

Sugar pine, in contact with the soil, shows moderately durable qualities, although this might prove less apparent in a climate not so dry as that of California. In brief, sugar pine closely resembles the eastern white pine in its physical characteristics. It is, however, generally considered more brittle than the latter; and its large, conspicuous resinducts are somewhat of a detraction.

The wood is still used for making shakes (a split shingle 36 by 6 inches), as its straight grain, and the ease with which it splits, make it preferable for this purpose. Logs, too knotty to cut into uppers, but otherwise sound and straight grained, are sometimes turned into bolts for match work.

WHITE FIR.

White fir, in 1910, ranked twenty-third in the amount of lumber produced in the United States. It is cut in several states, but, in 1910, California ranked first in the production of lumber from this species, with 49.2 per cent of the total cut.

The species ranges from the northern boundary of the State southward, on the Sierra and on the higher peaks of the coast ranges, to the southern boundary, and eastward to Arizona and Nevada. It is lacking on the coast ranges from Lake County south to the San Rafael Mountains. Over 13 billion feet of it, in the form of live saw timber, are to be found in the National Forests within the State.

Its commercial distribution is entirely within the yellow pine-sugar pine belt. It is not attractive to the lumberman at high levels, except where it occurs mixed with timber trees of the better class. Although it is the most recent of the Sierra species to become merchantable, its standing on the market is insecure. The reason for this lies in the fact that its wood is similar to that of the pines, but far inferior, in most respects. However, it makes excellent paper pulp and is now used most extensively for this purpose. Hitherto, it has had no field outside of that covered by sugar and yellow pine, in which it could not compete.

The height that the tree attains commonly varies between 140 and 180 feet, and the diameter between 3 and 5 feet.

The wood is light, rather coarse grained, brittle, soft, easily worked, warps considerably, splits easily, holds nails fairly well, decays rapidly in contact with the soil; and is often wind shaken. It is odorless and tasteless, and therefore useful for boxes, woodenware, etc.; it has also had some use as door stock, in which it proves fairly serviceable.

Its principal future use, however, may be in the manufacture of paper. It is soft, white, and has a long, strong fiber, three qualities required of a good paper wood. It is now being utilized for this purpose, as, in 1910, 30,845 cords were converted into pulp by means of the mechanical and sulphite processes. This amount, 0.8 per cent of the total pulp wood consumed in the United States, was prepared in Oregon and California.

INCENSE CEDAR.

California is the only state in which incense cedar is cut. The species occurs in the Sierra and coast ranges. Its total stand of live saw timber in the National Forests within the State is about three and three quarter billion feet, forming 1 to 2 per cent of the yellow pine forest in the

Trinity Mountains, 2 to 7 per cent of that in the northern Sierra, and as much as 10 to 20 per cent of that in the southern portion of its range.

The height that the tree attains commonly varies between 75 and 110 feet, and the diameter between 3 and 5 feet.

The wood is very light, soft, brittle, and not strong; the grain fine, straight and even; and the sapwood nearly white. It is easily worked on account of its softness and even texture; and the heartwood is very durable in contact with the soil. It is chiefly used for fencing and poles, and somewhat for sills, etc. Formerly it was not shipped to any extent, but, recently, a heavy demand has arisen for it, in the shape of pencil slats, in the east.

This species is not highly considered by Sierra lumbermen. It has a rapid taper; and the large trees are almost invariably unsound, as cavities filled with brittle, brownish material occur throughout the heartwood. The wood between the cavities is usually sound; and except in so far as the unsoundness affects the strength or appearance of the lumber, it is not objectionable, as this rot ceases after the tree is cut.

The chief future use of the wood will probably be found in the manufacture of the cheaper grades of lead pencils. Here its softness, straight grain, and whittling and staining qualities make it a valuable substitute for the rapidly disappearing southern red cedar. The sound wood between the rotten cavities can be converted into pencil slats with little waste.

BLACK COTTONWOOD.

This species is abundant along streams in the Sierra and southern cross ranges, but much less frequent in the coast mountains. It is generally found between 3,000 and 6,000 feet above sea level.

Under the best conditions for its growth it attains a height between 80 and 125 feet, and a diameter between 3 and 4 feet; but over much of its range it is under 50 feet in height, and the diameter is from 12 to 18 inches.

The wood is soft and straight grained; in dense stands it is fine grained. The color is a dull, grayish brown. Large logs, obtainable from the best grown trees, give clear, wide lumber.

RED FIR.

This species occurs in the northern part of the State, extending southward in the coast ranges to Lake County. It is found throughout the Sierra, but chiefly on the west side, forming 9 billion feet of the total stand of live saw timber in the National Forests within the State.

The tree, in the region of its best development, forms a clear, cylindrical bole, clear from 40 to 60 feet, and reaching a maximum diameter of 5 feet. It commonly attains a height between 125 and 175 feet, and a diameter between $2\frac{1}{2}$ and 4 feet.

The wood is one of the heavy fir woods, soft but firm, rather brittle, straight and usually fine grained. It is considerably more durable, in

an unprotected state, than the wood of any of the other native firs. The color is yellowish brown, with a reddish tinge. It has good working qualities, which should render it useful for a number of purposes to which the pine is put.

LAWSON CYPRESS.

Oregon and California produce all the Lawson cypress lumber that is utilized; but, in 1910, Oregon produced 27½ million feet, board measure, whereas the amount cut in California was too small to report.

This species (known also as white cedar and Port Orford cedar) ranges from the northern border of the State southward within the fog belt, to Mad River, Humboldt County, extending from within a few miles of the sea to points from 10 to 40 miles inland; ascending the seaward slopes of the Coast Range to 5,000 feet elevation. It is not abundant in California, and but 515 million feet of live saw timber are found in the National Forests within the State.

The height that the tree attains commonly varies between 135 and 175 feet, and the diameter between 3 and 6 feet.

The wood is light and moderately strong; the grain fine, even and compact; and the color light yellow or almost white, though occasionally reddish, the thin sapwood being hardly distinguishable. It is abundant in odoriferous oil, distasteful to insects and vermin; and is susceptible of a beautiful polish, as well as easily worked and durable.

YUCCA.

This species ranges from the southern base of the San Bernardino Mountains to the coast, and northward to Monterey, sometimes ascending mountain slopes to 4,000 feet elevation.

The trees are usually under 10 or 12 feet in height, and seldom over 10 inches in diameter.

The wood, pale yellowish white in color, is rather soft and light when dry, but tough because of its strong fibers. The manufacturers of Yucca products will accept no tree under ten inches in diameter; and, after turning off the veneer, they leave a core five inches thick.

BLUE GUM.

This species was introduced from Australia in 1856. It reaches its greatest development along the coast, and in river bottoms, where foggy days are common and the annual rainfall at least 15 inches. When grown under favorable conditions it ranks among the fastest growing trees in the world.

The wood is yellowish white and easily polished. The fibers are much interlaced, making it tough and difficult to split. The grain is often irregular, which makes the wood liable to chip under the planer, but gives it a very pleasing effect when smoothly finished.

So far it has been used successfully only where specially selected trees are sawed, and the lumber carefully air-seasoned for long periods.

It is impossible, at present, to take the run of a eucalyptus grove and turn it into merchantable lumber without making prohibitive the cost of the material obtained. This is chiefly due to the excessive checking and warping, and the great and uneven shrinkage when drying. Under these conditions it can compete with the Australian blue gum neither in price nor quality, should any great demand for eucalyptus lumber arise. Blue gum is not durable in contact with the soil, and is a very poor substitute for Douglas fir piling in waters where the marine wood-borers are active. A full discussion of the California eucalyptus is given in Forest Service Circular No. 179.

SYCAMORE.

This species ranges from the lower Sacramento River, through the interior valleys and coast ranges, to Lower California. The height that the tree attains commonly varies between 40 and 60 feet, and the diameter between 18 and 30 inches. The trunks are often short, giving off several trunk-like branches. The wood is pale brown, tinged with red, cross grained and very difficult to split, but it is attractive and suitable for interior finish and cabinet work.

PEPPERWOOD OR LAUREL.

This species occurs in the coast regions of the State; and also in the Sierra from the head of the Sacramento Valley to the southern border; but its commercial range is limited to the northern coast ranges. The largest single merchantable stand contains about five million feet, board measure.

The height that the tree attains commonly varies between 60 and 80 feet, and the diameter between $2\frac{1}{2}$ and $3\frac{1}{2}$ feet. In the dense forest it has a clean, straight trunk from 30 to 40 feet long. The wood is moderately heavy when dry, hard, very firm, and fine grained. It is a rich yellowish brown, often mottled, and the sapwood is very thick. It is a valuable cabinet and finishing wood, as it has a beautiful grain when polished.

MOUNTAIN MAHOGANY.

This species is found in the Sierra Nevada Mountains and south to the San Jacinto Mountains. The tree is usually shrubby, and under 10 feet in height, though occasionally 15 to 25 feet high, and 4 to 8 inches in diameter. The wood is very dense, fine grained, and exceedingly heavy. It checks and warps badly in drying, after which it is very hard. Freshly cut wood has a distinct mahogany red color, which browns upon exposure.

TANBARK OAK.

The tanbark oak ranges from the northern border of the State through the coast ranges to Santa Barbara, and from the Humboldt region eastward, by the way of the Shasta Mountains, to the Sierra Nevada, following the latter range as far south as El Dorado County. It attains its commercial development in Mendocino and Humboldt counties; but never forms a pure stand, occurring in association with redwood, Douglas fir, madrona, Garry or Oregon oak, California black oak, and western chinquapin.

The tree generally grows from 50 to 75 feet high, and from 1 to 2 feet in diameter. Trees from 80 to 85 feet, or somewhat taller, and from 3 to 4 feet in diameter, sometimes occur. It grows as a shrub on the high mountains. The wood is dense and fine grained, very hard, and somewhat brittle, the color light brown, faintly tinged with red.

From 1901 to 1907, 185,000 cords of tanbark, at 2,400 pounds to the cord, were produced in California.

Some few attempts have been made to utilize the wood. Flooring was manufactured for a time, and a few thousand feet were converted into furniture, cabinet work, and showcases. The principal difficulty encountered with tanbark oak is the fact that it checks excessively and is liable to decay before it can be manufactured into lumber. This is due largely to the custom of felling the trees in the spring and early summer, at which time the bark can be removed without difficulty. It is well known that the proper time to cut hardwoods for successful handling is in the fall and winter.

It has proved too porous for tight cooperage stock, resembling red oak in this respect; but from experiments that have been made upon it, it appears to be a good wood for wagon rims and auto-top bows. Outside the few uses to which it has been put, some of it is sold for fuel; but the greater portion is allowed to rot in the woods after the bark has been peeled.

Forest Service Bulletin No. 75 gives a full and complete account of the properties and uses of tanbark oak.

THE CALIFORNIA OAKS.

There is at present scarcely any use except as fuel for the various species of California oaks. The old timber is generally too brittle and weak for purposes where strength is required; and the large percentage of rotten trunks in an old stand makes the wood practically useless for lumber purposes. It seems probable, however, that the young growth under 12 inches in diameter possesses sufficient strength and toughness to render it valuable for tool handles and vehicle and implement stock. In fact, the young growth of some of the species is used for these purposes, but only locally. However, one of these oaks, the Garry or Oregon oak, is utilized extensively in Oregon, where it enters into the boatbuilding, cooperage, fixture, furniture, handle, planing-mill, saddle, and vehicle industries, about two million feet being used. Lumber of this species is shipped into California, although a great deal grows in the northern portion of this State.

MADRONA.

This species grows in the northern cross ranges of the State, in the coast ranges southward to the San Gabriel Mountains, and southward in the Sierra to the head of the Tuolumne River, ranging from sea level to 3,000 feet elevation. Very often the tree grows from 60 to 80 feet high, with a straight, clean trunk 2 to 3 feet in diameter. Frequently, however, it is low and shrubby, or from 25 to 40 feet high, with a crooked or leaning trunk 8 to 15 inches through.

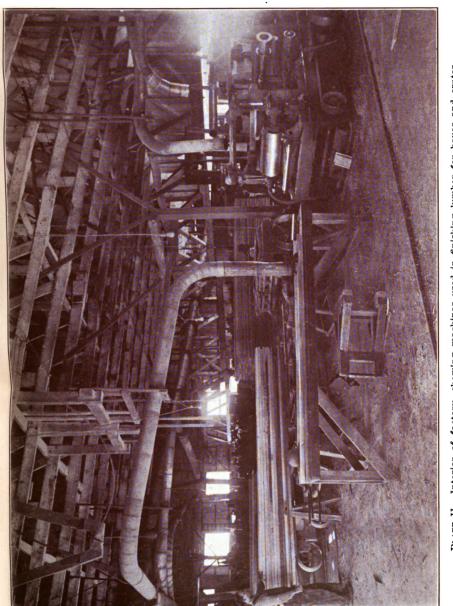
The wood is pale reddish brown, with a thin whitish sapwood; rather heavy, dense, fine grained; very hard when dry, but cuts like softwood while green; and it is usually quite brittle. It makes a handsome flooring, for which small quantities of it are now being used.

THE FOREIGN WOODS.

Mahogany, Japanese oak, and Spanish cedar were the principal foreign woods used in California in 1910.

The name mahogany covers a number of different species, only one of which is the true mahogany. In this publication the name American mahogany designates tropical woods, grown in North and South America, which are called mahogany by the trade. That a large proportion of the lumber thus designated is not the true mahogany, may be gauged from the fact that while the cut of the latter is about eighteen million feet, many times that amount of lumber is sold under that name in the markets of the world. In 1908 the imports of mahogany into the United States amounted to 41,678,000 feet, of which 65.5 per cent came from North America, 18.1 per cent from Europe, 13.8 per cent from Africa, 2.2 per cent from South America, and .4 per cent from Asia. Most of that imported from North America was grown in Mexico, some in British Honduras, some in Cuba, and a small amount in Nicaragua and Honduras. The greater portion of that from South America was the so-called Colombian mahogany, which is not a true mahogany; a little came from Peru, where some of the true mahogany is found. Although no mahogany is produced in Europe, much of it is shipped via European ports (principally those of Great Britain). is a fact worth noting that the finer qualities of logs come through the English markets, although it is probable that none of the lumber from Great Britain reaches the Pacific coast. An interesting discussion relative to the so-called Colombian mahogany may be found in Forest Service Circular No. 185.

Japanese oak is a comparatively recent arrival in California. It seems to take the place of eastern white oak in places where great strength is not required. Some of it, however, is now being used for railroad ties in this country.



PIATE II. Interior of factory, showing machines used in finishing lumber for boxes and crates.

INDUSTRIES.

Six hundred separate operators manufacture finished products, although all of them do not consider wood as their principal raw material.

Sixty-six per cent of the timber that they use is grown in California; 28 per cent in Oregon and Washington; 5 per cent in the remainder of the United States; and 1 per cent in foreign countries, including the Philippine and Hawaiian islands. Sixty-four per cent of the western yellow pine lumber produced in the State is used in the wood-using industries, together with 20 per cent of the redwood, 18 per cent of the Douglas fir, 32 per cent of the sugar pine, 21 per cent of the white fir, and 13 per cent of the incense cedar lumber. Western yellow pine ranks first in amount and value; redwood second in amount and third in value, while Douglas fir stands third in amount and ranks second in value.

Among the industries specified, Douglas fir ranks first in ten; redwood in nine; plain white oak, eastern maple, and Sitka spruce in two; and western yellow pine, black cottonwood, Lawson cypress, Spanish cedar, hickory, red gum, yucca, Oregon maple and cherry, each first in one. Thirty-four industries in all are tabulated.

The following table gives a comparison between the wood-using industries of the three Pacific coast states, California, Washington and Oregon:

	Quantity used s	nnually.	Average cost per 1,000	Total cost.	Grown	Grown out of
State.	Feet, board	Per	feet.		in State, per cent.	the State,
	measure.	cent.	F. o.	b. factory.		per cent.
California	661,806,478	51.0	\$23 74	\$15,712,494	66.0	34.0
Washington	337,555,125	26.1	19 48	6,576,413	99.0	1.0
Oregon	296,791,900	22.9	15 87	4,708,731	99.2	0.8
Total	1,296,153,503	100.0		\$26,997,638		

In the tables embodied in this report, a particular manufacture is not considered an industry unless three or more factories are engaged in it, but the data go into the miscellaneous table. This is done to preserve the confidential nature in which the information was submitted.

Where veneer enters into the industry, it has been reduced to the basis of inch boards, and totaled with the lumber. In most cases, under the industry, the actual number of square feet of veneering used is given. It should be mentioned, however, that in 1910 California consumed 183,000 feet (log scale) of wood in the manufacture of veneers.

Where the percentage of manufactured lumber of any species used in an industry is not given, it means that the amount is less than 0.1 per cent of the total.

TABLE 1. SUMMARY OF CONSUMPTION BY SPECIES.

Kinds of wood	f wood.	Quantity used annually.	nnually.	Average cost	Total	Grown in Cali-	Grown	
Соптоп папе.	Botanical name.	Feet, board measure.	Per cent.	feet.	b. fac		California, per cent.	
Western yellow pine	Pinus ponderosa	200,209,631	7.04		\$4,876,006	2.0	10	
Redwood	Sequoia sempervirens	109,228,231	16.5	24 58	2,685,267	100.0	0.0	
Douglas fir	Pseudotsuga taxifolia	106,720,363	16.4		3,015,290	17.1	6.78	
Sitks sprine	Pices sitchensis	67,131,375	10.1		1,169,288	0.0	100.0	
Sugar vine	Dinis lambertians	34,946,956	5.3	21 56	752,002	27.76	5.8	
White oat (plain)	Onergie alba	24,115,864	3.8		1.836.377	0.0	100.0	
White day	Ables concolor	13,725,890	2.0	11 49	157.676	100.0	0.0	
Wasten howlesh	Thurse betweenhalls	9.625.830	7		147.718	0.0	100.0	
Died. oottommood	Donning twishoosma	5,011.175	0.8	23 21	117.833	12.9	87.1	
Black Cottonwood	Abic memides	4.604.830	0.7		50.729	100.0	0.0	
Tomoon ownsom	Chamseynaria lawsoniana	3.082.447	0.5		158,150	3.5	8.88	
Inames and ar	Tiboodus domerons	2,757,500	0.4	18 11	50,042	100.0	0.0	
Oragon oak	Onergia garryana	2,006,000	0.3		96,500	0.0	100.0	
White oak (marter-gawed)	Quercia alba	1,508,227	0.2		134,546	0.0	100.0	
Birch	Betula an	1,498,873	0.2	79 86	119,279	0.0	100.0	
DESUT	Swietenia mahagoni and Cariniana pyriformis	1,136,537	0.2	178 53	202,908	0.0	100.0	
Jananese oak (nlain)	Quereus dentata	1,041,950	0.3		94,917	0.0	100.0	
Fastern manle	Acer sn.	1,017,622	0.2	80 67	880,28	0.0	100.0	-
Eastern ash	Fraxinus 80.	701,698	0.1	88 47	65,587	0.0	100.0	-
Hickory	Hicoria	619,401	0.0	101 82	96,352	0.0	100.0	
Yellow poplar	Liriodendron tulipitera	565,158	0.0	68 88	55,610	0.0	100.0	
Japanese oak (quarter-sawed)	Quercus dentata	344,665	0.0	111 46	38,415	0.0	100.0	
Genisaro		250,010	0.0	124 98	31,246	0.0	100.0	- '
Red gum	Liquidambar styraciflua	237,258	0.0	- 20 - 20 - 20 - 20 - 20 - 20 - 20 - 20	18,86	0.0	0.00	
Yucea	Yucca mohavensis	168,800	0.0	8 8	000,01	0.00	9.0	
Spanish cedar	Cedrela odorata	162,073	0.0	3 5	25,045	9 6	9.6	
Elm	Ulmus sp.	160,040	0.0	8 8	5,138	9.0	0.001	•
Beech	Fagus atropunices	100,001	0.0	3 3	10,000	9.0	9.6	
Australian ironbark	Eucalyptus leucoxylon	152,000	o.	98 OIT	10,000	9.0	0.00	
Black walnut	Juglans nigra	112,916	0.0	157 69	17,806))	9.8	
Red oak	Quercus rubra	93,500	0.0		5,503	0.0	100.0	
Juana costa	Entevolobium cyclocarpum	90,500	0.0		10,350	0.0	100.0	•
Teak	Tectona grandis	89,785	0.0	164 62	14,782	0.0	100.0	
California blue gum	Eucalyptus globulus	26,350	0.0		4,874	100.0	0.0	
Cottonwood (eastern)	Populus deltoides	49,225	0.0	96 48	4,749	0.0	100.0	
Locust	Robinia pseudacada	45,000	0.0	90 04	6	0	100	
Prima vera	Tubebuis donnellsmithii	38,808	0.0	147 55	201	2.0	100	
					10515	:	7	

Philippine mahogany	Pterocarpus incleus	83,792	0.0	151 51	5,120	0.0	100.0
African mahogany	Khaya senegalensis	27,996	0.0	63 44	1,776	0.0	100.0
Descent manla	Ager macrophyllum	20,500	0.0	58 88	1,206	0.0	100.0
Ciborion ash	Fraxinus excelsa	18,000	0.0	82 78	1,490	0.0	100.0
Sycamore	Platanus racemosa	17,000	0.0	12 47	212	100.0	0.0
Oregon ash	Fraxinus oregons	14,600	0.0	44 93	999	0.0	100.0
_	Eucalyptus globulus	13,000	0.0	106 85	1,376	0.0	100.0
Red bean	Dysoxylon muellerei	10,000	0.0	120 00	1,200	0.0	100.0
Orange	Citrus sp.	8,450	0.0	90 06	192	100.0	0.0
Circassian walnut	Juglans caucasica	8,000	0.0	185 00	1,480	0.0	100.0
Cherry	Prunus serotina	7,575	0.0	149 04	1,129	0.0	100.0
Australian hickory		6,500	0.0	105 08	889	0.0	100.0
K08	Acacia Koa	6,125	0.0	159 18	975	0.0	100.0
English willow	Salix alba	5,470	0.0	375 00	2,061	0.0	100.0
Pepperwood	Umbellularia californica	2,200	0.0	75 00	980	100.0	0.0
Manzanita	Arctostaphylos glauca	2,000	0.0	27 50	18	100.0	0.0
Mountain mahogany	Cercocarpus parvifolius	1,000	0.0	15 00	15	100.0	0.0
Mountain lilac	Ceanothus thyrsiflorus	1,000	0.0	15 00	15	100.0	0.0
Chestnut	Castanea dentata	1,000	0.0	45 00	45	0.0	100.0
Australian mahogany	Eucalyptus resinifera	1,000	0.0	135 00	135	0.0	100.0
Camphorwood	Dryobalanops aromatica	1,000	0.0	225 00	225	0.0	0.001
Osage orange	Toxylon pomiferum	28	0.0	100 00	20	0.0	100.0
Boxwood sawdust	Buxus sempervirens	175,000	pounds	6 57	1,150	0.0	100.0
Rosewood	Pterocarpa erinoceus		pounds		202	0.0	100.0
Japanese willow		_	spunod		1,140	0.0	100.0
Rattan	Calamus ciliaris		pounds	-	008	0.0	100.0
Reed	Arundo sp.	000,6	spunod		1,980	0.0	100.0
Lignum vitæ	Lignum vitee		pounds		9	0.0	100.0
Ebony	Diospyros ebenum		pound		520	0.0	100.0
Broom corn			tons	-	11,840	73.4	26.6
				İ			
Total		661,699,875			\$15,712,494		
		_	_		_		

TABLE 2. SUMMARY OF CONSUMPTION BY INDUSTRIES.

Industries.	Quantity used	annually.	Average cost per 1,000 feet.	Total cost.	Grown in Cali- fornia,	Grown out of California
	Feet, board measure.	Per cent.	F . o.	b. factory.	per cent.	per cent
Boxes and crates	309,406,285	46.8	\$15 63	\$4,835,280	78.1	21.9
Sash, doors, etc	181,519,498	19.9	22 78	2,995,841	73.6	26.6
Planing mill products	98,488,422	14.9	31 20	8.073.410	59.8	40.1
Cooperage	36,247,825	5.5	49 12	1,780,485	17.2	82.0
Miscellaneous	19,109,927	2.9	11 20	213,984	59.2	40.5
Ships and boats	18,281,570	2.8	39 84	728,436	12.0	86.0
Tanks	17,209,311	2.6	38 08	655,150	74.8	25.1
Furniture	7,345,485	1.1	84 75	255,254	25.5	74.5
Woodenware and novelties	6,540,890	1.0	30 02	196,333	25.6	74.4
Fixtures	5,078,627	0.8	66 11	335,751	26.4	73.6
Vehicles	8,183,495	0.5	85 74	268,667	4.6	95.4
Caskets and coffins	2,598,000	0.4	22 00	57,152	66.3	33.7
Trunks and valises	2,017,885	0.3	27 08	54,645	18.0	82.0
Agricultural implements	1,075,900	0.2	36 86	39,656	30.7	69.3
Patterns	690,290	0.1	51 97	35,873	86.2	13.8
Car construction	547,000		39 66	21,693	31.1	68.9
Frames and moulding	480,294		90 39	43,412	10.5	89.5
Elevators	484,000		35 06	15,215	14.0	86.0
Refrigerators, etc.	271,200		30 49	8,268	2.2	97.8
Instruments, musical	252,750		59 35	15,001	63.7	36.3
Machine parts	250,991		43 77	10,986	27.3	72.7
Boxes, tobacco	213,500		123 40	26,345	7.5	92.5
Signs			30 09	4,664	86.5	13.5
Dairymen's supplies, etc	130,000		24 81	3,225	47.0	53.0
Sporting goods	65,800		76 89	5,060	0.0	100.0
Pumps	49,980		22 39	1,119	0.0	100.0
Artificial limbs	45,270			4,691	87.9	12.1
Machinery, electrical				3,046	0.0	100.0
Instruments, scientific			73 04	2,367	17.6	82.4
Bungs and faucets	27,622		53 19	1,469	11.6	88.4
Wood carvings				1,285	72.1	27.9
Chairs				2,418	0.0	100.0
Brushes	12,885			1.071	26.7	73.3
Laundry appliances			55 83	477	0.0	100.0
Printing material			153 88	1,012	0.0	100.0
Miscellaneous, given in lbs.				13,753		
Total	661,806,478	100.0	\$23 74	\$15,712,494		

AGRICULTURAL IMPLEMENTS.

Total grown out of California

Douglas fir (red fir, Washington fir, Oregon pine). California;

Washington; Oregon.

223,010,405

Of total amount of fir manufactured 0.7 per cent used in this industry. Agricultural implements; frames of fruit-handling machinery; windmill frames.

Strong; cheap; durable against wear.

Rough, all grades, clear predominating, 1 to 8 inches thick.

By-products: strap handles.

Western yellow pine (white pine, mountain pine). California

Of total amount of yellow pine manufactured less than 0.1 per cent used in this industry.

Harvester construction; raisin mills; siding for agricultural implements and fruit-handling machinery; truck tops.

Soft; light; easily worked.

Rough, clear, 1 to 2 inches thick.

By-products: rollers, runs, screen-frames, strap handles.

Eastern maple (hard maple, rock maple). New England; Lake States; Middle West; South.

Of total amount of maple manufactured 5.9 per cent used in this industry.

Fruit rolls; harvesters; main boxes of hay presses; rollers and runs on agricultural implements.

Strong; tough; bores well; resists splitting; wears smoothly.

Rough, first and second grades, 1 to 4 inches thick.

By-products: rollers, runs, screen frames, strap handles.

White oak, plain (eastern oak).

Middle West; South.

Of total amount of oak manufactured 0.1 per cent used in this industry.

Agricultural implements; frames for plows; harrows; harvesters; sills for hay presses.

Strong, durable against decay.

Frames for plows; rough, clear, 3 inch.

Harrow: rough, clear, 2 to 3 inches.

Harvesters: rough, clear, 1 to 2 inches. Sills: rough, clear, 6 by 8, or 8 by 8.

Hickory.

South; Middle West.

Of total amount of hickory manufactured 4.0 per cent used in this industry.

Almond hullers; eveners on hay derricks; harvesters; hitches on agricultural implements; pitmans and springs on fruit-handling machinery.

Hard, strong, tough.

Rough, clear, $1\frac{1}{2}$ to 4 inches thick.

By-products: rollers, runs, screen frames.

White ash.

Middle West; South.

Of total amount of ash manufactured 2.8 per cent used in this industry.

Harvesters; screen frames.

Strong, wears well.

Rough, first and second grade, 1 to 4 inches thick.

By-products: rollers, runs, screen frames.

Sitka spruce (spruce).

Oregon; Washington.

Of total amount of spruce manufactured less than 0.1 per cent used in this industry.

Fruit racks; seeder construction.

Tough, easily worked.

Fruit racks: rough, clear, 6 inches thick. Seeders: rough, common to clear, 1 inch thick.

Redwood.

California.

Of total amount of redwood manufactured less than 0.1 per cent used in this industry.

Bottoms and sides of fruit-handling machinery; windmills.

Light, easily worked, durable against decay.

Fruit-handling machinery: rough, clear, 1 inch thick.

Windmills: rough, common, 2 inches thick.

TABLE 3. AGRICULTURAL IMPLEMENTS.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 fee	r	Total cost.	Grown in California, feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o. b. factory.			measure.	measure.
Douglas fir	717,250	66.7	\$28	80	\$20,657	115,000	602,250
Western yellow pine	215,000	20.0	39	42	8,475	215,000	
Eastern maple	60,150	5.6	62	54	3,762		60,150
White oak (plain)	29,000	2.7	96	06	2,785		29,000
Hickory	25,000	2.2	50	00	1,250		25,000
White ash	19,500	1.8	116	08	2,263		19,500
Sitka spruce	9,500	0.9	46	84	445		9,500
Redwood	500	0.1	38	00	19	500	
Total	1,075,900	100.0	. \$36	86	\$39,656	330,500	745,400

ARTIFICIAL LIMBS AND SUPPORTS.

Yucca.

California.

Of total amount of yucca manufactured 23.6 per cent used in this industry.

Corsets, jackets, surgeon's splints.

Clear, light, fibrous, tough, white, pliable when wet, easily molded to form.

Logs, or veneer, 1-16, 1-12, $\frac{1}{8}$, $\frac{1}{8}$, and $\frac{1}{4}$ inch thick.

English willow.

Illinois.

Of total amount English willow manufactured 100 per cent used in this industry.

Artificial limbs.

Lightness, coupled with strength, easily worked.

Rough, specially prepared, seasoned five years, ends painted, 5 by 5, 6 by 6, 8 by 8, up to 10 inches thick.

Checked sticks not accepted.

TABLE 4. ARTIFICIAL LIMBS AND SUPPORTS.

Kinds of wood	Quantity annual		Average cost per 1,000 feet.	Total cost.	Grown in California. feet. board	Grown out of California. feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	measure.	measure.
YuccaEnglish willow	39,800 5,470	87.9 12.1	\$66 33 375 00	\$2,640 2,051	39,800	5,470
Total	45,270	100.0	\$103 63	\$4,691	. 39,800	5,470

BOXES AND CRATES, PACKING.

Western yellow pine (white pine, mountain pine).

California;

Nevada; Arizona.

Of total yellow pine manufactured 84.6 per cent used in this industry. Beer cases; box shooks; fruit and shipping boxes.

Light, soft, easily worked, nails well in thin pieces, makes clean, neat appearing box, does not shrink.

Some logs, mostly rough lumber, box grades, 1 to 2 inches thick.

By-products: balusters, brackets, ceiling cores, corner blocks, cresting, piling sticks, stakes; edgings converted into core stock for veneered doors; thin strips into moldings; sawdust used for refrigeration and sweeping purposes.

Note.—One manufacturer estimates that a carload of orange-box shooks contains 12,000 pieces § by § by 111 inches.

Sitka spruce.

Oregon; Washington.

Of total spruce manufactured 69.5 per cent used in this industry.

Berry chests; butter, cheese, cracker, egg and fruit boxes; cannery and packing cases.

Light, white, strong, tough, odorless, tasteless, holds nails well.

Bolts, lumber, veneer. Rough, box, common and merchantable lumber, $\frac{3}{8}$ to $1\frac{1}{2}$ inches thick. Veneer, 2,100,000 feet of 1-24 and 1-20 inch thick used.

By-products: cleats for box covers, crate material, tent stakes, wash-board frames; sawdust converted into floor polish and butcher and meat shop floor covering.

Sugar pine.

California; Oregon.

Of total amount of sugar pine manufactured 58.8 per cent used in this industry.

Boxes: box shooks.

Light, soft, cheap, holds nails without splitting; good appearance.

Logs: rough, box, 1 to 2 inches thick.

By-products: small boxes.

Western hemlock.

Oregon; Washington.

Of total amount of hemlock manufactured 59.2 per cent used in this industry.

Box shooks; butter, cracker, fruit boxes, etc., crates.

Good grain; strong, tough.

Rough, common or box, 1 to $1\frac{1}{2}$ inches thick.

White fir.

California.

Of total amount of white fir manufactured 22.1 per cent used in this industry.

Boxes, box shooks.

Durable, cheap, easily available in some localities; nails well.

Rough, box, 1 to $1\frac{1}{2}$ inches thick.

Note.-In some cases the knots are cut out and the holes plugged.



Redwood.

California.

Of total amount of redwood manufactured 2.2 per cent used in this industry.

Fruit, shelf and shipping boxes; fruit crates.

Soft, easily worked, does not split when nailed.

Fruit boxes and crates; bolts, shelf boxes; surfaced on two sides; clear, $\frac{1}{2}$ and $\frac{3}{3}$ inches thick; covered with cloth or paper, and, in some cases, the lids and bottoms are made of pasteboard.

Heavy shipping boxes: rough, common, 1, $1\frac{1}{4}$ and $1\frac{1}{2}$ inches thick.

Light shipping boxes: for shipping stage effects and decorations; surfaced, common 1 and 2 inches thick.

By-products: balusters, brackets, ceiling cores, corner blocks, stakes.

Douglas fir (Oregon pine).

California; Oregon; Washington.

Of total amount of Douglas fir manufactured 2.2 per cent used in this industry.

Boxes.

Cheap, easily worked.

Rough, common, 1 to 1 inch thick.

Note.—In some cases the knots are cut out and the holes plugged.

Black cottonwood.

Oregon; Washington.

Of total amount of black cottonwood manufactured 44.2 per cent used in this industry.

Boxes.

Strong, tough.

Rough, common, 1 to $1\frac{1}{2}$ inches thick.

Red fir.

California

Of total amount of red fir manufactured 28.8 per cent used in this industry.

Boxes.

Free from pitch.

Rough, box, 11 inches thick.

Incense cedar.

California.

Of total amount of incense cedar manufactured 3.4 per cent used in this industry.

Boxes.

Durability; availability in certain localities.

Logs only.

Red gum.

Middle West; South.

Of total amount of red gum manufactured 2.2 per cent used in this industry.

Special boxes.

Clear, smooth, strong, tough, does not warp.

Three-ply veneer, \frac{3}{8} to \frac{1}{2} inch thick.

PLATE III. Parafflning small kegs in cooperage factory. Olive kits above; water pails behind the machine.

Elm (soft elm).

Lake States; Middle West; South.

Of total amount of elm manufactured 2.2 per cent used in this industry.

Splint baskets.

Bends well, nails without splitting.

Roller peeled veneer, 1-10, 1-12, and 1 inch thick.

White oak, plain (eastern oak).

South; Middle West.

Of total amount of plain white oak manufactured less than 0.1 per cent used in this industry.

Special boxes.

Durable, strong.

Surfaced, 14 by 4 or 5-16 inches, 5 feet 6 inches long.

Basswood.

Middle West.

Of total amount of basswood manufactured 1.0 per cent used in this industry.

Fancy boxes.

Light, tough.

One-ply veneer, 1 inch thick.

TABLE 5. Boxes and Crates, Packing.

Kinds of wood,	Quantity used annually.		Average cost per 1.000 feet.	Total cost.	Grown in California. feet, board	Grown out of California, feet, board
-	Feet, board measure.	Per cent.	F. o. b.	factory.	measure.	measure.
Western yellow pine	225,029,000	72.7	\$ 15 4 3	\$3,472,497	215,029,000	10,000,000
Sitka spruce	46,621,590	15.1	16 47	767,875	!	46,621,590
Sugar pine	20,536,000	6.6	14 46	296,950	18,536,000	2,000,000
Western hemlock	5,700,000	1.8	14 54	82,850		5,700,000
White fir	8,032,080	1.0	15 36	46,573	3,032,080	l
nedwood	2,436,000	0.8	15 97	88,908	2,436,000	
Douglas fir	2,395,340	0.8	14 45	34,613	1,170,000	1,225,340
Black cottonwood	2,217,040	0.7	31 60	70,052		2,217,040
Red fir	1,328,330	0.4	15 55	20,653	1,328,330	
Incense cedar	93,750		25 00	2,344	93,750	
Red gum (Missouri)	10,000		130 00	1,300		10,000
Elm	3,630		115 70	420		3,630
White oak (plain)	2,860		70 00	200		2,860
Basswood	665		75 19	50		665
Total	309,406,285	100.0	\$ 15 6 8	\$4,885,280	241,625,160	67,781,125

BOXES, TOBACCO.

Spanish cedar.

Mexico.

Of total amount of Spanish cedar manufactured 94.0 per cent used in this industry.

Cigar boxes.

Light, strong, easily worked, nails well.

Surfaced, clear, 3-16 inch thick.

Red gum.

Middle West; South.

Of total amount of red gum manufactured 60.2 per cent used in this industry.

Cigar boxes.

Smooth, strong, does not warp.

Stained, surfaced, first grade, 3-16 inch thick.

Basswood.

Middle West.

Of total amount of basswood manufactured 88.6 per cent used in this industry.

Cigar boxes.

Stains to imitate cedar.

One-ply veneer, 1 inch thick.

Redwood.

California.

Of total amount of redwood manufactured, less than 0.1 per cent used in this industry.

Cigar boxes.

Light, soft, good color, nails well.

No. 1 shakes, or rough, medium lumber, 4 inch thick.

Note.—All pieces over 1 by 2 by 4 inches are utilized.

Incense cedar.

California.

This material has been tried out for cigar box purposes, but the oils which it contains are absorbed by the cigars, rendering the latter nauseating to the smoker.

TABLE 6. Boxes, Tobacco.

Feet, board	Per			Grown in California, feet, board measure.	Grown out of California. feet, board measure.
measure.	cent.	F. o. b. f	actory.		
122,500	57.4	\$159 34	\$19,520		122,500
55,000	25.7	80 00	4,400		55,000
20,000	9.4	68 75	1,375		20,000
16,000	7.5	65 62	1,050	16,000	
213,500	100.0	\$123 40	\$26,345	16,000	197,30
	122,500 55,000 20,000 16,000	122,500 57.4 55,000 25.7 20,000 9.4 16,000 7.5	122,500 57.4 \$159 34 55,000 25.7 80 00 20,000 9.4 68 75 16,000 7.5 65 62	122,500 57.4 \$159 34 \$19,520 55,000 25.7 80 00 4,400 20,000 9.4 68 75 1,375 16,000 7.5 65 62 1,060	122,500 57.4 \$159 34 \$19,520

BRUSHES.

Oregon maple.

Oregon; Washington.

Of total amount of Oregon maple manufactured 17.0 per cent used in this industry.

Brush bodies.

Strong.

Rough, clear, 1 to 3 inches thick.

Sugar pine.

California.

Of total amount of sugar pine manufactured less than 0.1 per cent used in this industry.

Brush blocks for street brushes.

Rough, good, 2 inches thick; surfaced, clear, 3 by $\frac{1}{2}$ or $1\frac{1}{2}$ by 18 inches. By-products: small brush blocks.

Eastern maple.

Lake States; Middle West; South.

Of total amount of eastern maple manufactured 0.3 per cent used in this industry.

Brush blocks.

Strong, does not split when bored.

Rough, or surfaced, clear, 1 to 1½ inches thick.

General dimensions of blocks 1½ by 3 by 18 and 24 inches.

Note.—Blocks, in some cases, roughed out in Pennsylvania. Freight charge then equal to one third manufacturer's charge. One manufacturer plans to experiment with sawdust chemical combinations that may be molded.

Oregon ash.

Washington; Oregon.

Of total amount of Oregon ash manufactured 10.3 per cent used in this industry.

Brush bodies.

Tough, workable, does not warp or split.

Rough, clear, 1 to 3 inches thick.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Easily worked, durable.

Rough, third grade, 1 to 3 inches thick.

American mahogany (mahogany).

South and Central America.

Brush covers.

Appearance.

Clear veneer 1-16 inch thick.

Yellow poplar (whitewood).

Middle West; South.

Brush covers.

Appearance.

Clear veneer, 1 inch thick.

TABLE 7. BRUSHES.

Kinds of wood,	Quantity used annually.		Average cost per 1.000 feet.	Total cost.	Grown in California. feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o. b	. factory.	measure.	measure.
Oregon maple	3,500	27.2	\$60 00	\$210		3,500
Sugar pine	3,440	26.7	100 00	344	3,440	
Eastern maple	3,180	24.7	110 00	349		3,180
Oregon ash	1,500	11.6	60 00	90		1,500
Lawson cypress	1,000	7.8	29 00	29		1,00
American mahogany	200	1.5	210 00	42		20
Yellow poplar	65	0.5	100 00	7		6
Total	12,885	100.0	\$83 15	\$1,071	3,440	9,44

BUNGS AND FAUCETS.

Sitka spruce.

Oregon; Washington.

Plugs.

Tough, tasteless.

Rough, common, 3 by 3 inches.

Hickory.

South; Middle West.

Of total amount of hickory manufactured 0.8 per cent used in this industry.

Bung starters.

Strong, tough.

Rough, common, 1½ inches thick.

Redwood.

California.

Plugs.

Durable against decay.

Rough, lumber, 1 to $1\frac{1}{2}$ inches thick.

Western yellow pine (white pine).

California.

Plugs for oil well pumps to keep them clean in transportation. Cheap.

Rough, common, 4 by 4 inches.

Rosewood (cocobola).

South America.

Faucets, faucet handles.

Non-porous.

Logs, 10 to 12 inches in diameter.

Rough, No. 1 lumber.

TABLE 8. BUNGS AND FAUCETS.

Kinds of wood,	Quantity annual		Average cost per 1,000 feet.	Total cost.	Grown in California, feet, board	Grown out of California. feet, board
	Feet, board measure.	Per cent.	F . o. b.	factory.	measure.	
Sitka spruce	10,000	54.9	\$20 00	\$200 00		10,000
Hickory	5,000	27.5	140 00	700 00		5,000
Redwood	2,000	11.0	25 00	50 00	2,000	
Western yellow pine	1,200	6.6	15 00	18 00	1,200	
Total	18,200	100.0	\$ 53 19	\$968 00	3,200	15,000
Rosewood	20,050	lbs., 2½	c per lb.	501 25		
				\$1,469 25		(lbs.) 20,05

CAR CONSTRUCTION.

Douglas fir (Oregon pine, Washington fir).

California; Oregon;

Washington.

Of total amount of Douglas fir manufactured 0.4 per cent used in this industry.

Flooring in logging and freight cars.

Strong, wears well.

Rough, clear, 1 to 6 inches thick.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Of total amount of Lawson cypress manufactured 1.1 per cent used in this industry.

Passenger cars.

Rough, clear and select, 1 to 3 inches thick.

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American mahogany (east and west coast mahogany). Central America.

Of total amount of American mahogany manufactured 2.6 per cent used in this industry.

Finish in passenger cars.

Beauty of appearance.

Rough, first and second grade, 1, 2 and 3 inches thick.

Eastern ash (white ash). New England; Middle West; South.

Of total amount of eastern ash manufactured 3.6 per cent used in this industry.

Passenger cars, carlins, corner posts.

Strong, tough.

Rough, clear and select, 1 to 4 inches thick.

Redwood.
Siding on box cars.

Durable against decay.

Rough, clear, 1 inch thick.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 1.8 per cent used in this industry.

Roofing and moldings in passenger cars.

Rough, clear, ½ to 2 inches thick.

Siberian ash.

Siberia.

California.

Of total amount of Siberian ash manufactured 55.6 per cent used in this industry.

Substitute for eastern ash. See above.

White oak, plain (eastern oak).

Middle West: South.

Construction of passenger and freight cars.

Strong.

Rough, clear and select, 1 to 8 inches thick.

Siberian oak, plain (Japanese oak).

Siberia; Japan.

Of total amount of Siberian oak manufactured 0.5 per cent used in this industry.

Same as white oak. See above.

Sitka spruce.

Oregon; Washington.

Car construction.

Rough, clear and select, 1 to 4 inches thick.

Eastern maple. New England; Lake States; Middle West; South.

Of total amount of eastern maple manufactured 0.3 per cent used in this industry.

Finish in passenger cars.

Surfaced on four sides, clear, 2 to 4 inches thick.

TABLE 9. CAR CONSTRUCTION.

Kinds of wood,	Quantity used annually.		Average cost per Total cost.		Grown in California.	Grown out of California.	
	Feet, board measure.	Per cent.	F. o	b.	factory.	feet, board measure.	feet, board measure.
Douglas fir	402,000	73.5	\$24	03	\$9,658	150,000	252,000
Lawson cypress	83,000	6.0	42	73	1,410		33,000
American mahogany	30,000	5.5	140	00	4,200		30,000
Eastern ash	25,000	4.6	126	00	3,150		25,000
Redwood	20,000	3.7	25	00	500	20,000	
Yellow poplar	10,000	1.8	62	50	625		10,000
Siberian ash	10,000	1.8	105	00	1,050		10,000
White oak (plain)	5,000	0.9	80	00	400		5,000
Siberian oak (plain)	5,000	0.9	80	00	400		5,000
Sitka spruce	4,000	0.7	15	88	64		4,000
Eastern maple	3,000	0.6	78	64	235		3,000
Total	547,000	100.0	\$39	66	\$21,692	170,000	377,000

CASKETS AND COFFINS.

Redwood.

California.

Of total amount of redwood manufactured 1.6 per cent used in this industry.

Caskets; coffins; shipping boxes for same.

Free from pitch, cheap, good finish, nails well, durable against decay.

Caskets and coffins: rough, clear and merchantable, 1 inch thick for bottoms and sides; $1\frac{1}{2}$ to 2 inches thick for tops.

Note.—One firm uses all material over 2 inches long.

Sitka spruce.

Oregon; Washington.

Of total amount of spruce manufactured 1.3 per cent used in this industry.

Coffins.

Cheap, durable.

Rough, merchantable, 1 to 2 inches thick.

TABLE 10. CASKETS AND COFFINS.

Kinds of wood.	Quantity annual		Average cost ner 1,000 feet.	Total cost.	Grown in California, feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	measure.	measure.
Redwood Sitka spruce	1,723,000 875,000	66.3 33.7	\$24 03 18 00	\$41,401 15,751	1,723,000	875,000
Total	2,598,000	100.0	\$22 00	\$57,152	1,723,000	875,000

CHAIRS.

White oak, plain (eastern oak).

Middle West; South.

Chair frames and legs.

Strong, tough, durable.

Frames: surfaced, clear 3 inch thick.

Legs: rough, clear and select, 2 to 3 inches thick.

American mahogany (Lima mahogany).

Peru; Central America.

Of total amount of American mahogany manufactured 0.4 per cent used in this industry.

Chairs.

Beauty of appearance.

Rough or surfaced, first grade, 1 to 3 inches thick.

By-products: children's chairs, hassocks, stools.

Philippine mahogany (Narra).

Philippine Islands.

Of total amount of Philippine mahogany manufactured 8.9 per cent used in this industry.

Chairs.

Surfaced, clear, 11 to 2 inches thick.

By-products: sawdust used in manufacture of chemical combinations for bathroom floors, trays, drainboards, etc.

Red birch.

Lake States; Middle West.

Chairs.

Beauty of appearance.

Surfaced, clear, 3 by 6 inches.

By-products: children's chairs, footstools, hassocks.

	Quantity used annually.		Average cost per 1,000 feet.	Total cost.	Grown in California, feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o. 1	o. factory.	measure.	measure.
White oak (plain)	9,500	50.7	\$118 42	\$1,125		9,500
American mahogany	5,000	26.7	147 50	738		5,000
Philippine mahogany	3,000	16.0	135 00	405		3,000
Red birch	1,250	6.6	120 00	150		1,250
Total	18,750	100.0	\$128 93	\$2,418		18,750

TABLE 11. CHAIRS.

COOPERAGE.

White oak, plain (eastern oak).

South; Middle West.

Of total amount of plain white oak manufactured 86.6 per cent used in this industry.

Staves and heading on tight stock; beer and wine barrels and casks. Strong, not porous, contains a tannin beneficial to wine.

Staves: rough, clear, $1\frac{3}{4}$ inch thick for barrels, $1\frac{5}{8}$ for $\frac{1}{2}$ barrels, $1\frac{1}{2}$ for $\frac{1}{3}$ barrels; $1\frac{1}{4}$ for $\frac{1}{4}$ and $\frac{1}{6}$ barrels: beer stock. Heads for barrels, $\frac{1}{2}$ and $\frac{1}{3}$ barrels: rough, 2 inches thick. Wine barrels: staves $\frac{3}{4}$ inch thick: heading, clear, planed and jointed, $\frac{5}{8}$ to $\frac{7}{3}$ inch thick.

By-products: broken staves and heads converted into small keg heads.

Note.—It is estimated that 400,000 wine barrels are used annually in California, besides i barrels, kegs, etc.

Douglas fir (Oregon pine, yellow fir, Washington fir).

California;

Oregon; Washington.

Of total amount of Douglas fir manufactured 4.8 per cent used in this industry.

Staves and heading for tight stock: sugar barrels, cracker barrels, etc.

Strong, flexible; contains pitch which renders it unfit for wine barrels, as no suitable filler has been found.

Stave-bolts: rough, lumber, mixed grades, \{\frac{3}{2}\) to \(\frac{3}{2}\) inch thick.

Western hemlock.

Oregon; Washington.

Of total amount of hemlock manufactured 40.8 per cent used in this industry.

Staves and heading for slack stock.

Strong, tough, flexible.

Stave bolts: lumber, surfaced on one side, 7-16 to 3 inch thick.

By-products: broken staves and heads converted into heads for small kegs.

Sitka spruce.

Oregon; Washington.

Of total amount of spruce manufactured 5.4 per cent used in this industry.

Tight stock.

Tasteless; seems to be a likely substitute for oak.

Stave bolts.

White fir.

California.

Of total amount of white fir manufactured 13.5 per cent used in this industry.

Slack stock.

Light, strong.

Rough, planed and jointed, 3 to 3 inch thick.

By-products: broken staves and heads converted into heads for small kegs.

White oak, quarter-sawed (eastern oak). Middle West; South.

Of total amount of quartered white oak manufactured 31.5 per cent used in this industry.

Barrels and small cooperage.

Strong, tough.

Rough, first grade, 1, $1\frac{1}{3}$ and $1\frac{3}{4}$ inches thick.

Elm. New England; Lake States; Middle West.

Of total amount of elm manufactured 75 per cent used in this industry.

Hoops for beer, cracker, salt and sugar barrels.

Strong, tough, bends well.

Finished, first grade, 6 hoops to the barrel.

PLATE IV. Bar and store fixtures and interior finish, in finishing room of factory. Counter in foreground with Genisaro top and elm front.



Redwood.

California.

Slack stock.

Easily worked.

Stave bolts.

Western yellow pine (white pine).

California.

Staves for cracker and salt barrels.

Light, strong, substantial.

Clear staves, 3 inch thick, 21 staves to the barrel.

TABLE 12. COOPERAGE.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 feet.	Total cost.	Grown in California, feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F . o. b.	factory.	measure.	measure.
White oak (plain)	20,900,510	57.7	87 1 69	\$1,498,358		20,900,510
Douglas fir	5,183,600	14.3	16 72	86,670	4,240,600	943,000
Western hemlock	3,925,330	10.8	16 50	64,568		3,925,330
Sitka spruce	8,640,525	10.0	16 50	60,069		3,640,525
White fir	1,850,000	5.1	16 50	80,525	1,850,000	
White oak (quarter-sawed)	475,000	1.3	70 00	33,250		475,000
Elm	120,000	0.8	82 50	3,900		120,000
Redwood	102,860	0.8	16 00	1,645	102,860	
Western yellow pine	50,000	0.2	30 00	1,500	50,000	
Total	36,247,825	100.0	\$49 12	\$1,780,485	6,243,460	30,004,365

DAIRYMEN'S, POULTERERS' AND APIARISTS' SUPPLIES.

Redwood

California.

Incubators, and brooders.

Light, cheap.

Rough, or surfaced on two sides, first and second grade 13-16 or 1 inch thick.

Sitka spruce.

Oregon; Washington.

Incubators; brooders; butter molds.

Incubators, brooders: strong, nails well; surfaced on two sides, clear, 13-16 inch thick. Butter molds: soft, tough, light color and weight, tasteless; rough merchantable, 1 to 1½ inches thick.

By-products: dowels, handles.

Eastern maple (hard maple).

New England; Lake States; Middle West; South.

Of total amount of eastern maple manufactured 0.5 per cent used in this industry.

Butter molds.

Close grained, hard, smooth, tasteless.

Rough, clear, 1 to 4 inches thick.

By-products: dowels, handles.

Douglas fir (Oregon pine).

Oregon; Washington.

Butter mold frames; poultry houses.

Stiff, straight.

Rough, common, 1 to 4 inches thick.

By-products: dowels, handles.

Eastern cottonwood.

Middle West.

Of total amount of eastern cottonwood manufactured 4.1 per cent used in this industry.

Beehive materials.

Rough, first and second grade, 1 inch thick.

TABLE 13. DAIRYMEN'S, POULTERERS', AND APIARISTS' SUPPLIES.

Kinds of wood,	Quantity used annually.			Average Total cost.		Grown in California, feet, board	Grown out of California. feet, board
	Feet, board measure.	Per cent.	F. (). b.	factory.	measure.	measure.
Redwood	61,000	47.0	\$17	95	\$1,095	61,000	
Sitka spruce	60,000	46.2	24	17	1,450		60,000
Eastern maple	5,000	3.8	110	00	550		5,000
Douglas fir	2,000	1.5	20	00	40		2,000
Eastern cottonwood	2,000	1.5	45	00	90		2,000
Total	130,000	100.0	\$24	81	\$3,225	61,000	69,00

DOWELS.

Western yellow pine.

Dowels.

Light, easily worked.

Rough, No. 2, 1 by 10 or 11 by 11 inches.

Elm

Michigan; Middle West.

Framing for rattan furniture and baby carriages.

Suitable for bending into frames.

Finished, round, $\frac{7}{8}$ to 1 inch in diameter.

Eastern ash (white ash).

Middle West; South.

Framing for rattan furniture and baby carriages.

Finished, all round, first quality, 3 to 1 inch in diameter.

Eastern maple (white maple).

Michigan.

California.

Baby carriage frames.

Light color, fine finish.

Finished, beaded.

Red birch.

New England; Lake States; South; Middle West.

Framing for rattan furniture and baby carriages.

Finished, all round, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ and 1 inch in diameter.

ELEVATORS.

Douglas fir (Oregon pine, Washington fir). Oregon; Washington.

Of total amount of Douglas fir manufactured 0.3 per cent used in this industry.

Elevator flooring, frames, gates, guides, platforms and posts.

Strong, tough, easily worked.

Frames: surfaced, clear, 2 to 6 inches thick.

Guides: rough, select and clear, 1 to 8 inches thick.

Flooring, gates, posts: rough, clear, 1 to 1½ inches thick.

Eastern maple.

Lake States; Middle West; South.

Of total amount of Eastern maple manufactured 3.6 per cent used in this industry.

Flooring, guide strips, platforms.

Hard, durable.

Surfaced, clear, 1 to 4 inches thick.

By-products: cams, car switchbacks, governor frames, shims, etc.

Redwood.

California.

Platforms.

Durable against decay.

Rough, common, select and clear, 1 to 4 inches thick.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 2.3 per cent used in this industry.

Cages.

Strong, tough.

Surfaced on four sides, common to clear, $2\frac{1}{2}$ to 6 inches thick.

White oak, plain.

Middle West; South.

Frames, platforms, etc.

Strong, tough.

Surfaced, clear, 1 to 4 inches thick.

By-products: cams, governor frames, switch-car backs, shims.

Sugar pine.

California.

Platforms.

Durable against decay.

Rough, common, select and clear, 1 to 4 inches thick.

Western yellow pine.

California.

Construction.

Surfaced, clear, 4 by 4 inches thick.

Sitka spruce.

Oregon; Washington.

Platforms.

Easily worked, good finish.

Rough, clear, 1 inch thick.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 0.2 per cent used in this industry.

Finish.

Surfaced, clear, # inch thick.

TABLE 14. ELEVATORS.

Kinds of wood,	Quantity used annually.		Average eost per 1,000 feet.			Grown in California. feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F . o.	F. o. b. factory.			
Douglas fir	294,500	67.8	\$25 1		87,419		294,500
Eastern maple	36,500	8.4	81 7	ro l	2,985		36,500
Redwood	86,000	8.8	17 (00	612	36,600	
Eastern ash	16,000	8.7	106 (00	1,696		16,000
White oak (plain)	16,000	8.7	90 8	50	1,448		16,000
Sugar pine	15,000	8.5	17 (00	255	15,000	
Western yellow pine	10,000	2.8	30 (ю	300	10,000	
Sitka spruce	9,000	2.1	45 8	56	410		9,000
Yellow poplar	1,000	0.2	90 (00	90		1,000
Total	434,000	100.0	\$35 (16	\$15,215	61,000	373,000

FIXTURES.

Douglas fir (Oregon pine, Washington fir, red fir).

California;

Oregon; Washington.

Of total amount of Douglas fir manufactured 1.1 per cent used in this industry.

Bases and hidden work on showcases; backing for fixtures; cheap fixtures; counters; finish; framing of showcases and fixtures; pantry fixtures; shelves.

Strong, cheap, takes good stain and polish, beautiful effects in slash grain and mission finish.

Bases, hidden work, backing: rough or surfaced, clear, 1 to 3 inches thick. Cheap fixtures: rough, clear, and select, 1 to 4 inches thick. Counters, shelves: rough or surfaced, mill run, 13-16 and 1 inch thick. Framing: rough, common, 1 to 4 inches thick. Pantry fixtures: rough, common to clear, 1 to 2 inches thick.

By-products: short ends converted into cores for veneer work, rails, small display novelties; sawdust into patented chemical combination used as drainboards, sinks and bathroom floors, etc.

Redwood. California.

Of total amount of redwood manufactured 0.7 per cent used in this industry.

Backing for show and wall cases; counters; drawer bottoms; shelves; showcase linings; store bins, veneer cores.

Shelving, lining: color, figure, ease of working, durability: rough, clear, 1 to 4 inches thick or surfaced ½ to 1 inch thick. Counters: light,

easily worked, good finish, imitates mahogany: rough or surfaced on two sides, clear, 1 inch thick. Store bins: does not stain or warp; rough, common, 1 inch thick. Veneer cores: soft, easily worked: rough, clear, 1 to 4 inches thick.

By-products: cores, drawer fronts for desks, rails, small display novelties.

Sitka spruce.

Oregon; Washington.

Of total amount of spruce manufactured 0.8 per cent used in this industry.

Drawer bottoms; flour bins; pantry fixtures; shelving principally.

Flour bins: odorless, tasteless. Shelving: light, soft, strong, tough; rough, clear and select, 1 inch thick.

By-products: cores, dresser brackets, rails, small turnings, etc.

White oak, plain (eastern oak).

South; Middle West.

Of total amount of plain white oak manufactured 1.9 per cent used in this industry.

Bar, office and store fixtures; filing cabinets; frames and bases on showcases; showcases; showcase moldings; veneered panels.

Strong, beautiful grain, polishes well.

Fixture work: rough, clear, 1 to 4 inches thick.

Filing cabinets: rough, clear, § inch thick.

Showcases: rough, clear, 7 and 1 inch thick.

Showcase moldings: surfaced on two sides, clear, \(\frac{3}{4} \) to 3 inches thick.

Veneered panels: 69,500 square feet of rough veneer, 1-20, 1-16, $\frac{1}{8}$ and 3-16 inch thick, used.

By-products: apiarists' supplies, moldings; sawdust used in manufacture of chemically prepared bathroom floors, washboards, sinkboards, etc.; for stable bedding, and for packing ice; shavings for stable bedding.

American mahogany (tobasco mahogany, East and West Coast mahogany, Peruvian, Mexican and Honduras Central mahogany).

America.

Of total amount of American mahogany manufactured 39.3 per cent used in this industry.

Bar rails and tops; bottoms and panels of showcases; counter tops; fixtures; frames and doors of showcases; wall cases.

Dark color, good figure, finish, rich effects.

Rough, or surfaced, first and second grade, 1 to 4 inches thick; 82,670 square feet of veneer, 1 to 5 ply, 1-20, 1-16, $\frac{1}{8}$, 3-16, $\frac{3}{8}$ and $\frac{1}{2}$ inch thick, used.

By-products: sawdust for packing ice, stable bedding and manufacture of chemically prepared floors, sinks, drainboards, etc.; shavings for stable bedding; strips converted into moldings.

Western yellow pine (white pine, mountain pine). California; Arizona.

Of total amount of yellow pine manufactured 0.2 per cent used in this industry.

Bottoms of showcases; enameled fixtures; pantry and store fixtures; shelving; veneer cores.

Enameled fixtures: color; rough, clear, 1 to 11 inches thick.

Shelving: soft, easily worked, suitable to the climate: rough, clear and select, 1 inch thick.

Veneer cores: rough, shop, 3-16 to 1 inch thick.

By-products: sawdust used in manufacture of chemically prepared bathroom floors, sinkboards, drainboards, etc.

Red birch.

New England; Lake States; Middle West.

Of total amount of red birch manufactured 23 per cent used in this industry.

Bank, bar, office, soda and store fixtures; bases, bottoms, doors, frames and panels of showcases; drawer sides; painted work; showcase moldings.

Hard, strong, finishes to imitate more costly woods, especially mahogany.

Rough, first and second grades, 1 to 2 inches thick; some curly birch; 75,900 feet of 3 to 5 ply veneer, 1-16, $\frac{1}{5}$, $\frac{1}{5}$ and $\frac{1}{2}$ inch thick, used.

By-products: desk door fronts and pulls; 1 inch strips converted into moldings; sawdust used in manufacture of chemically prepared floors, sinks and drainboards.

White oak, quarter-sawed (eastern oak).

South; Middle West.

Of total amount of quartered white oak manufactured 13.1 per cent used in this industry.

Bank, bar, office and store fixtures; counter fronts; showcases; veneered panels; wall cases.

Strength, beauty of finish.

Rough, or surfaced, first and second grade, 1 to 2 inches thick.

Veneer: counter fronts, panels, etc.: 27,500 square feet of 1 to 5 ply, 1-20, 1-16, \frac{1}{2}, \frac{1}{2} and \frac{1}{2} inch thick, used.

By-products: strips converted into moldings.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Of total amount of cypress manufactured 5.3 per cent used in this industry.

Fixtures; shelving principally; showcase doors.

Light, close grained, easily worked, takes enamel finish, imitates mahogany and birch, odor of wood protects containers against insects. Rough, clear and select, 1 to 2 inches thick.

By-products: beehive supplies, cores, rails: sawdust used for refrigeration, and in the manufacture of chemically prepared floors, sinks, drainboards, etc.

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Sugar pine.

California.

Of total amount of sugar pine manufactured 0.4 per cent used in this industry.

Altars; beading for showcases; counters; shelving; veneer cores.

Counters: soft, straight grain: rough, clear, 1 to 2 inches thick.

Shelving: soft, strong, odorless, easily worked, does not shrink: rough, clear and select, $1\frac{1}{4}$ and $1\frac{1}{2}$ inches thick.

Veneer cores: rough, common and shop, 1 to 2 inches thick.

By-products: desk drawer fronts and pulls; scraps glued together for cores in veneered doors; short ends converted into rails, etc.

Genisaro (jenizaro).

Mexico.

Of total amount of genisaro manufactured 49.7 per cent used in this industry.

Bar tops, exposed portions of store fixtures; office, saloon and store fixtures; showcases.

Hard, beautiful grain and appearance.

Rough, clear, 1 to 2 inches thick: 25,500 square feet of 1-20 and 3-16 inch veneer used.

Eastern maple (white maple).

Lake States.

Of total amount of eastern maple manufactured 4.9 per cent used in this industry.

Counters; counter tops; fixtures; panels, doors and bottoms of show-cases; store fixtures.

Strong, good finish.

Rough, clear, 1 to 4 inches thick: some bird's-eye: 7,175 square feet of 3-ply veneer, 1-16, $\frac{1}{2}$ and $\frac{1}{2}$ inch thick, used.

Siberian oak, plain (Japanese oak).

Japan; Siberia.

Of total amount of plain Siberian oak manufactured, 4.3 per cent used in this industry.

Bank, bar, and office fixtures; counter frames; showcases and showcase frames.

Cheap, easily worked, good figure, imitates eastern white oak.

Rough, first and second grade, 1 to 2 inches thick.

By-products: sawdust used in the manufacture of chemically prepared bathroom floors, drainboards, etc.

Black cottonwood.

Oregon; Washington.

Of total amount of black cottonwood manufactured 0.7 per cent used in this industry.

Drawer bottoms.

Veneer, 9-32 inch thick.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 4.5 per cent used in this industry.

Backing on veneered work; bottoms and shelves of showcases; cross veneering; drawer sides; enameled fixtures; fixtures; painted work; panels; panel cores.

Soft, strong, easily worked, good color.

Surfaced, clear, ½ to ¾ inch thick; 72,000 feet of veneer, 3 to 5 ply for panel cores, 1 to 3 ply for cross veneering, painted work, panels, etc., 1-20, 1-16, ¼ and 3-16 inch thick, used.

By-products: short ends converted into cores, rails, etc.; strips into moldings.

African mahogany.

Africa.

Of total amount of African mahogany manufactured 46.5 per cent used in this industry.

Fixtures; panels; showcase frames.

Rough, clear, $\frac{1}{2}$ to 4 inches thick: 2,000 square feet of veneer 1-20 inch thick, used.

By-products: strips converted into moldings.

Japanese oak, quarter-sawed (Siberian oak).

Japan; Siberia.

Of total amount of Japanese oak manufactured 4.3 per cent used in this industry.

Bar and store fixtures; general fixture work; panels, showcases.

Hard, durable.

Rough or surfaced, first and second grade, $\frac{\pi}{8}$ and 1 inch thick: panels $\frac{\pi}{8}$ to $\frac{\pi}{4}$ inch thick.

By-products: sawdust used in the manufacture of chemically prepared floors, sinks, drainboards, etc.

Red oak, plain and quarter-sawed.

South; Middle West.

Of total amount of red oak manufactured 15.5 per cent used in this industry.

Fixtures.

Rough, first and second grade, 1 to 2 inches thick.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 10 per cent used in this industry.

General fixture work; office, saloon and store fixtures; showcases.

Beauty of finish.

Rough, clear, 1 to $1\frac{1}{2}$ inches thick: 1,000 square feet of veneer, 1-12, $\frac{1}{8}$ and $\frac{3}{8}$ inch thick, used.

By-products: moldings.

Prima vera (white mahogany).

Mexico.

Of total amount of prima vera manufactured 14.3 per cent used in this industry.

Fixtures; showcases.

Rough, clear, 1 to 4 inches thick.

By-products: strips converted into moldings.

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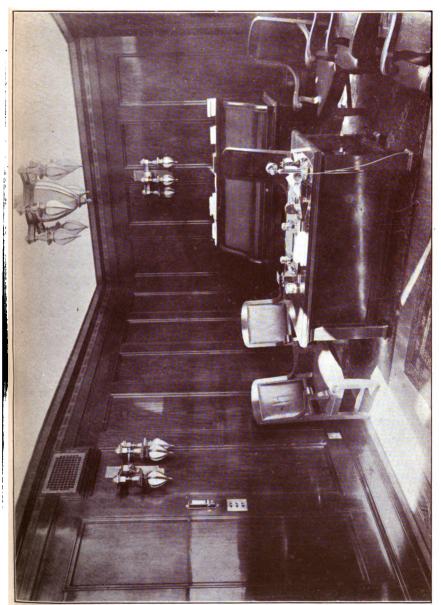


Plate V. Interior of office. Floor; oak, walnut, and maple. Mahogany interior finish and furniture. Inlaid work above panels, ebony and maple.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 0.6 per cent used in this industry.

Bank, office and store fixtures; showcases.

Strong, good finish.

Rough, clear, § to 1 inch thick.

Red gum.

Middle West; South.

Of total amount of red gum manufactured 0.7 per cent used in this industry.

Finished surfaces; store fittings.

Light finish to go with Circassian walnut panels.

Rough, clear and select, 1 to $1\frac{1}{2}$ inches thick.

By-products: strips converted into moldings.

Eastern cottonwood.

Middle West.

Of total amount of eastern cottonwood manufactured 6.1 per cent used in this industry.

Cores for panels.

Veneer, rotary cut: 20,000 square feet, 3-16 inch thick, used.

Elm.

Lake States; Middle West; South.

Of total amount of elm manufactured 0.3 per cent used in this industry.

Bottoms and panels of showcases.

Veneer, 3-ply, ‡ inch thick.

TABLE 15. FIXTURES.

Kinds of wood,	Quantity annual	used y.	Average cost per 1,000 feet.	Total cost.	Grown in California.	Grown out of California, feet, board measure.
	Feet, board measure.	Per cent.	F. o. 1	. factory.	feet, board measure.	
Douglas fir	1,252,310	24.7	\$31 48	\$39,421	17,500	1,234,810
Redwood	742.210	14.6	34 19	25,376	742,210	
Sitka spruce	545,150	10.7	83 96	18,524		545,15
White oak (plain)	453,500	8.9	106 98	48,493		453,500
American mahogany	446,485	8.8	180 48	80,571		446,48
Western yellow pine	443,720	8.5	39 01	16,920	431,720	2,000
Red birch	343,142	6.8	84 92	29,141		343,14
White oak (quarter-sawed)	198,320	3.9	107 66	21,351		198,32
Lawson cypress	164,270	3.2	55 71	9,152		164,27
Sugar pine	150,150	2.9	48 39	7,267	150,150	
Genisaro	124,325	2.4	122 58	15,240		124,32
Eastern maple	49,815	1.0	95 51	4,758		49,81
Siberian oak (plain)	44,500	0.9	88 09	3,920		44,50
Black cottonwood	33,335	0.7	45 00	1,500		33,38
Yellow poplar	25,160	0.5	113 42	2,854		25,16
African mahogany	15,620	0.3	293 47	4,584		15,62
Japanese oak (quarter-	·	Į.				
88(Wed)	14,800	0.8	113 88	1,685		14.80
Red oak	14,500	0.3	87 79	1,273		14,50
Black walnut	11,325	0.2	168 46	1,908		11,32
Prima vera	5,270	0.1	131 38	692		5,27
Eastern ash	4,000	0.1	108 57	434		4,00
Red gum (Missouri)	3,270	0.1	90 41	. 295		3,27
Eastern cottonwood	3,000	0.1	113 33	340		3,00
Elm	450		115 70	52		45
Total	5,078,627	100.0	\$66 1	\$335,751	1,341,580	3,737,04

FRAMES AND MOLDING.

Red gum.

Middle West: South.

Of total amount of red gum manufactured 33.3 per cent used in this industry.

Picture moldings.

Good grain, fine finish.

First grade, 1 inch thick, in 12 feet lengths.

White oak, plain (eastern oak).

Middle West; South.

Of total amount of plain white oak manufactured 0.6 per cent used in this industry.

Picture frames and moldings.

Hard, good grain and finish, joins easily, does not split.

Frames: rough, clear, 1 to 4 inches thick.

Moldings: rough, clear, 1 inch thick, in 12 feet lengths.

Note.—A large amount of finished molding is shipped into California from the middle west.

Red birch. New England; Lake States; Middle West.

Of total amount of red birch manufactured 6.9 per cent used in this industry.

Picture moldings.

Straight, good grain.

Rough, first and second grade, 12 feet length.

Redwood.

California.

Picture frames.

Straight grained.

Surfaced on one side, clear, 1 inch thick.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 22.1 per cent used $^{\rm in}$ this industry.

Picture moldings.

Beauty.

Surfaced, clear, 1 inch thick, in 12 feet lengths.

Douglas fir (Oregon pine).

Oregon; Washington.

Picture moldings.

Straight grained.

Rough, clear, 1 inch thick.

Sugar pine.

California.

Same as Douglas fir.

White oak, quarter-sawed (eastern oak). Middle West; South

Of total amount of quartered white oak manufactured 0.2 per cent used in this industry.

Picture frames.

Hard, straight grain.

Rough, first and second grade, 1 inch thick.

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Kinds of wood,	Quantity used annually.		Average cost per 1,000 feet.		Total cost.	Grown in California, feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o.	b. f	actory.	measure.	measure.
Red gum (Missouri)	152,000	31.6	\$ 75 (00	\$11,400		152,000
White oak (plain)	141,432	29.4	104 7	\mathbf{n}	14,809		141,432
Red birch	103,000	21.4	100 (ю [10,300		103,000
Redwood	47,632	9.9	23 5	52	1,120	47,632	
Black walnut	25,000	5.2	200 0	00	5,000		25,000
Douglas fir	6,000	1.3	38 0	ю	228		6,000
Sugar pine	2,730	0.6	75 0	00	205	2,730	
White oak (quarter-sawed)	2,500	0.6	140 0	00	350		2,500
Total	480,294	100.0	\$90 3	19	43,412	50,362	429,932

TABLE 16. Frames and Molding.

FURNITURE.

Douglas fir (Oregon pine, red fir, Washington fir). Oregon; Washington. Of total amount of Douglas fir manufactured 3.5 per cent used in this industry.

Bookcases; boxes of couches and wall beds; china closets; cores for veneered furniture; couches; dressers; framing of woven wire mattresses; spring supports of couches and beds; tea tables; turned legs on tables.

Light, strong, gives beautiful effects in slash grain, imitates more costly woods.

Boxes of couches, etc.: rough, clear, 1 to 1½ inches thick.

Dressers, etc.: rough, all grades, 1 to 2 inches thick.

Frames, spring supports, etc.: rough, merchantable, 2 inches thick.

Turned legs: rough, various grades, 2 to 4 inches thick.

Western yellow pine (yellow pine, white pine). Arizona; California; Nevada.

Of total amount of yellow pine manufactured 0.5 per cent used in this industry.

Backing; bed rails; bed slat frames; bookcases; boxspring couches; built-in dressers and sideboards; couch legs; drawer bottoms; spring beds; spring mattresses; table tops; wall beds.

Bookcases: clear, 11 inches thick.

Box springs, bed springs, mattresses: light, easily worked, nails well; rough or surfaced on one side, merchantable, 1 to 4 inches thick.

Built-in dressers, etc.: all grades and thicknesses.

Couch legs: rough, second grade, 3 by 3 inches.

Table tops: easily worked; rough or surfaced, shop grades, 1 to $1\frac{1}{2}$ inches thick.

Wall beds: rough, clear, 1 inch thick.

By-products: bolster frames; camp chairs and stools; cleats, dowels, and elevator blocks for spring beds; children's chairs; footstools; has-socks.

Sitka spruce.

Oregon; Washington.

Of total amount of spruce manufactured 0.8 per cent used in this industry.

Cores in veneered furniture; couch heads; tops on kitchen tables chiefly.

Couch heads: soft, tough, nails well; surfaced, select, 1 inch thick.

Table tops: easily worked, contains no pitch pockets, odorless, tasteless; rough or surfaced, clear and select, $\frac{\pi}{4}$ and 1 inch thick.

By-products: elevator blocks for wire mattresses.

Sugar pine.

California.

Of total amount of sugar pine manufactured 1.0 per cent used in this industry.

Backing; built-in dressers and sideboards; carved work; core stock; table frames and tops.

Light, soft, easily worked.

Backing, cores: rough or surfaced on two sides, shop grades, $\frac{3}{4}$ and 1 inch thick.

Dressers, sideboards: rough, all grades, 1 inch thick.

Carved work: surfaced on two sides, clear, 11 inches thick.

Table stock: rough, clear and select, 1 inch thick.

Redwood.

California.

Of total amount of redwood manufactured 0.3 per cent used in this industry.

Backing and shelves in dressers; bottoms of upholstered furniture; cores for veneered work in legs of heavy mission tables.

Backing, shelves: soft, easily worked; rough, medium, 1 inch thick.

Bottoms: surfaced, select, 1 inch thick.

Cores: cheap, holds glue well, dries quickly; rough, common, 1 to 4 inches thick.

By-products: strips on chairs and tabourets.

White oak, plain (eastern oak).

South; Middle West.

Of total amount of plain white oak manufactured 1.1 per cent used in this industry.

Bookcases; couch frames; davenports; desks; furniture; mattresses; sideboards; table legs and tops.

Durable, strong, polish, fuming qualities; finishes well in golden fumed and weathered.

Rough, common for posts and interior work, clear for other uses, 1 to 4 inches thick.

By-products: children's chairs, elevator blocks in wire mattresses, footstools, hassocks, small moldings; sawdust used for bedding in stables and litter in butcher shops.

Japanese oak, plain (Siberian oak).

Japan; Siberia.

Of total amount of plain Japanese oak manufactured 16.3 per cent used in this industry.

Flat-top desks; furniture; interior work; panels; posts; table legs.

Strong, beautiful grain, cheaper than the same grades of white oak, takes fume, colors evenly, easily worked.

Rough, common to clear, 1 to 2 inches thick.

By-products: short cuttings and strips used in chairs and tabourets.

Japanese oak, quarter-sawed (Siberian oak).

Japan; Siberia.

Of total amount of quartered Japanese oak manufactured 34.9 per cent used in this industry.

Furniture; library table legs; table tops.

Properties same as those of plain Japanese oak.

Rough, first and second grades, 1 to 2 inches thick.

Library table legs: 5,000 square feet of veneer, \frac{1}{8} inch thick, used.

Lawson cypress (white cedar, Port Orford cedar). Oregon; Washington.

Of total amount of cypress manufactured 2.9 per cent used in this industry.

Chests; closet fittings; drawer sides and bottoms; enameled furniture; linen closets.

Soft, aromatic, strong odor repellent to insects, clean appearing, takes good finish, especially for enameling.

Rough, clear and select, 1 to 1½ inches thick.

By-products: garden and surveyors' stakes, spindles; short cuttings and strips used in tabourets.

White oak, quarter-sawed (eastern oak). South; Middle West.

Of total amount of quartered oak manufactured 4.8 per cent used in this industry.

Bookcases; couch frames; furniture, table tops.

Strong; takes good finish, especially when fumed or weathered.

Rough, clear, 1 to 2 inches thick.

Library table legs: 5,000 square feet of veneer, 1-20 to $\frac{1}{8}$ inch thick, used.

By-products: elevator blocks for wire mattresses.

American mahogany (Lima, Peru,

South and Central

Mexico mahogany).

America; Mexico.

Of total amount of American mahogany manufactured 5.8 per cent used in this industry.

Davenports; dresser and table tops; furniture; tables.

Dark, good figure, excellent finish.

Rough, clear, 1 to 4 inches thick: 8,125 square feet of 1 to 3 ply veneer, 1-30, 1-20, $\frac{1}{8}$ and 3-16 inch thick, used.

By-products: children's chairs, footstools, hassocks.

Red birch.

New England; Lake States; Middle West.

Of total amount of red birch manufactured 3.4 per cent used in this industry.

Couch legs; drawer bottoms; frames and bases of desks and tables; furniture.

Hard, smooth, strong: finishes to imitate more costly woods, especially mahogany.

Rough or surfaced, first and second grade, 1 to 3 inches thick.

Veneer: some rotary cut: 17,500 square feet, 1 to 3 ply, $\frac{1}{8}$, 1-16 and $\frac{1}{4}$ inch thick, used.

By-products: children's chairs, desk door front and pulls, footstools, hassocks.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 5.1 per cent used in this industry.

Cores for veneering; drawer sides; furniture.

Cores: rough, No. 1, 2 inches thick.

Drawer sides: rough, No. 1, ½ inch thick.

General furniture: 22,500 square feet of veneer, \frac{1}{8} to \frac{1}{4} inch thick, used.

Eastern maple. New England; Lake States; Middle West; South. Of total amount of eastern maple manufactured 1.3 per cent used in this industry.

Feet; legs; furniture; tables; table legs.

Good figure, easily worked, fine finish.

Rough, first and second grades, 1 to 4 inches thick; some bird's-eye. By-products: strips converted into moldings.

Oregon maple.

Oregon.

Of total amount of Oregon maple manufactured 58.6 per cent used in this industry.

Couch frames; overstuffed furniture entirely covered by goods.

Hard.

Rough, first and second grades, $1\frac{1}{4}$ and $1\frac{1}{2}$ inches thick.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 9.6 per cent used in this industry.

General furniture work.

Beauty of finish.

Rough, No. 1 and 2, 1 to 3 inches thick: 500 square feet of veneer, 1-16 and $\frac{1}{8}$ inch thick, used.

African mahogany.

Africa.

Of total amount of African mahogany manufactured 28.2 per cent used in this industry.

General furniture work.

Beauty of finish.

Surfaced on two sides, No. 1, one inch thick and above.

Siberian ash.

Siberia.

Of total amount of Siberian ash manufactured 44.4 per cent used in this industry.

Drawer sides.

Rough, clear, 1 inch thick.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 0.9 per cent used in this industry.

Table tops.

Fuming qualities.

Rough, 1 to 2 inches thick, or surfaced on two sides, $\frac{\pi}{6}$ inch thick; all first grade.

Black cottonwood.

Oregon; Washington.

Of total amount of black cottonwood manufactured 0.1 per cent used in this industry.

Drawer bottoms in tables, chiffoniers, cupboards, dressers, etc.; flat top desks.

Veneer, 9-32 inch thick.

Genisaro (jenizaro).

Mexico.

Of total amount of genisaro manufactured 1.8 per cent used in this industry.

General furniture work.

Hard, finishes well.

Rough, clear, 1 to 3 inches thick.

Prima vera (white mahogany).

Mexico.

Of total amount of prima vera manufactured 8.2 per cent used in this industry.

General furniture work.

Rough, clear, 1 to 4 inches thick.

Philippine mahogany (Narra).

Philippine Islands.

Of total amount of Philippine mahogany manufactured 8.9 per cent used in this industry.

Chiffoniers; dressers; tables, etc.; furniture.

Beauty of finish.

Rough, No. 1, 1 to 3 inches thick.

Red fir.

California

Table legs.

Strong.

Rough, clear, 3 inches thick.

Red oak.

South; Middle West

Of total amount of red oak manufactured 1.9 per cent used in thi industry.

Furniture.

Beauty of finish.

Rough, No. 1, 1 to 4 inches thick.

Pepperwood (California laurel).

California

Of total amount of pepperwood manufactured 30.8 per cent used in this industry.

Hard, fine finish.

Rough, clear and select, 1 to 6 inches thick.

Teak.

Burmah

Of total amount of teak manufactured 1.7 per cent used in thi industry.

Rough, clear, 1 inch thick.

Red gum.

Middle West; South

Of total amount of red gum manufactured 0.2 per cent used in this industry.

Rough, No. 1, 1 to 2 inches thick.

Hickory.

Middle West; South.

Of total amount of hickory manufactured 0.2 per cent used in this industry.

Special furniture.

Strong, tough.

Rough, clear, 1 to 2 inches thick.

By-products: sawdust used for floor covering in butcher shops.

Camphorwood.

China.

Of total amount of camphorwood manufactured 100 per cent used in this industry.

Chest and closet lining.

Odor repulsive to insects and vermin.

Rough, not graded, 1 inch thick and over.

Circassian walnut.

Turkey.

Of total amount of Circassian walnut manufactured 9.4 per cent used in this industry.

Dressers; table tops.

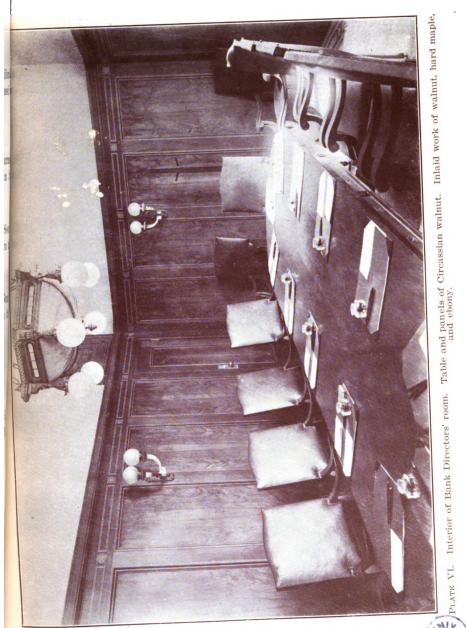
Beauty of finish.

Veneer, 1 inch thick.

Basswood.

Middle West.

Of total amount of basswood manufactured 0.7 per cent used in this industry.



Box bottoms on couches; table tops.

Box bottoms: 1 ply veneer, ‡ inch thick.

Table tops: surfaced, first grade, 3 inch thick.

Cherry.

Middle Atlantic States.

Of total amount of cherry manufactured 6.6 per cent used in this industry.

Tough, easily worked, fine finish.

Rough, clear, 1 inch thick.

Eastern cottonwood.

Middle West.

Of total amount of eastern cottonwood manufactured 1.0 per cent used in this industry.

Table tops.

Surfaced, clear, 7 inch thick.

Koa.

Hawaiian Islands.

Of total amount of koa manufactured 8.2 per cent used in this industry.

Rough, No. 1, 1 to 2 inches thick.

California blue gum.

California.

Of total amount blue gum manufactured 0.7 per cent used in this industry.

Repairs.

Strong, good finish.

Rough, clear, 2 inches thick.

Note.—One firm reports having manufactured 1,000 feet of blue gum into furniture. It was found that it was too heavy; the gum destroyed the glue joints; it was difficult to nail, and warped after finishing. This firm plans to experiment again.

Japanese willow.

Japan.

Of total amount of Japanese willow manufactured 100 per cent used in this industry.

Finished, first grade.

Reed.

India.

Of total amount of reed manufactured 100 per cent used in this industry.

Reed furniture.

Comes to California via New York.

TABLE 17. FURNITURE.

Kinds of wood	Quantity annual		Average cost per 1,000 feet.	Total cost.	Grown in California, feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	measure.	measure.
Douglas fir	8,881,890	52.8	\$23 10	\$88,516 66		3,831,890
Western yellow pine	1,228,300	16.9	21 08	25,892 56	1,158,300	
Sitka spruce	524,000	7.2	22 89	11,994 36		
Sugar pine	364,410	5.0	45 68	16,628 08		
Redwood	858,250	4.9	82 84	11,424 10		
White oak (plain)	264,625	8.6	105 19	27,834 58		
Japanese oak (plain)	170,000	2.8	85 28	14,497 60		
Japanese oak (quarter-	,		•••			2,0,000
sawed)	120,000	1.7	98 29	11,796 00		120,000
Lawson cypress	90,000	1.2	50 58	4,552 20		
White oak (quarter-sawed)	72,510	1.0	100 12	7,259 82		72,510
American mahogany	66,405	0.9	202 46	18,444 25		66,40
Red birch	50,670	0.7	90 68	4.594 91		
Yellow poplar	28.624	0.4	86 29			50,670
Eastern maple				2,470 00		
	13,306	0.2	108 95	1,883 16		,
Oregon maple	12,000	0.2	60 00	720 00		
Black walnut	10,805	0.1	178 90			
African mahogany	9,500	0.1	807 14			
Siberian ash	8,000	0.1	55 00	440 00		
Eastern ash	6,000	0.1	111 25	667 50		6,000
Black cottonwood	6,000	0.1	45 00	270 00		6,000
Genisaro	4,500		125 55	565 00		4,500
Prima vera	3,000		150 00	450 00		3,000
Philippine mahogany	3,000		125 00	375 00		3,000
Red fir	2,500		22 00	55 00	2,500	
Red oak	1,750		122 82	215 00		1,750
Pepperwood	1,600		71.88	115 00	1,600	
Teak	1,500		168 90	245 85		
Red gum (Missouri)	1,000		110 00	110 00		-,
Hickory	1,000		140 00			
Camphorwood	1,000		225 00			
Circassian walnut	750		200 00			
Basswood	500		50 00			50
Oherry	500		85 00	42 50		50
Eastern cottonwood	500		50 00	25 00		50
	500			100 00		50
KoaCalifornia blue gum	400		200 00 150 00	60 00	400	50
Cantornia bide gum	200		150 00	00 W	100	
Total	7,254,295	100.0	\$34 75	\$252,134 00	1,875,460	5,378,83
	Pounds.		Per M.			Pounds.
Japanese willow	12,000		\$95 00	1,140 00	i .	12,00
Reed	9,000		220 00	1,980 00		9,00
				\$255,254 00	1	

GATES AND FENCING.

Douglas fir (Oregon pine).

Oregon; Washington.

Fencing.

Strong.

Rough, common to clear, 1 to 4 inches thick.

Redwood.

California.

Fencing.

Light, cheap, easily worked, durable when exposed to weather.

Rough, medium grades, 1 to 6 inches thick.

Sugar pine.

California.

Fencing.

Light, cheap, easily worked, durable when exposed to weather.

Rough, common, select and clear, 1 to 4 inches thick.

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HANDLES.

Hickory.

South; Middle West.

Tool handles.

Strong, tough.

Rough, clear.

By-products: wedges, plugs.

Eastern maple (sugar maple).

New England; Lake States; Middle West; South.

Broom handles.

Elastic, tough, smooth surface for hands, remains straight.

Finished handles, 42 inches long, $1\frac{1}{8}$ and $1\frac{1}{4}$ inches in diameter.

Douglas fir (Oregon pine).

Oregon.

Broom handles.

Finished, clear.

Note.—Oregon maple and red alder broom handles, in finished form, are shipped in from Oregon. Alder turns well, is hard, and takes a fine polish. Oregon oak is used locally in parts of California, for ax, pick, and tool handles. Young growth up to ten inches in diameter, is tough and resilient. It should be a good substitute for hickory. Blue gum is used in small amounts, for the same purpose, but, unless given a long seasoning, is likely to warp and twist.

INSTRUMENTS, MUSICAL.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 2.1 per cent used in this industry.

Accordions; cross band veneering on pianos; moldings in pianos and player pianos; rack-boards on pipe organs.

Accordions: 1 inch thick.

Moldings: surfaced on two sides, clear, 1 inch thick.

Rack-boards: 3 to 1 inch thick.

Sitka spruce.

Oregon; Washington.

Backs, ribs, and sounding boards for pianos; pipe organ construction.

Free from sap, not liable to crack, shrinks evenly, resonant.

Rough, clear, 1 inch thick.

Note.—One manufacturer estimates that 40,000 feet of spruce is shipped each year from Los Angeles to eastern manufacturers of musical instruments.

American mahogany (Mexican mahogany). Mexico; Central America. Of total amount of American mahogany manufactured 0.5 per cent used in this industry.

Accordions; benches; moldings on pianos and player pianos; pipe organ cases.

Hard, good grain, fine finish, does not split.

Rough, clear, 1 inch thick; some crotch mahogany; 1,500 feet of veneer, 1 inch thick, used.

Sugar pine.

California.

Pianos and player pianos; piano keys; pipe organs.

Some objection to its use in pipe organ work on account of its price, pitch-galls, and large percentage of sapwood.

Rough or surfaced, clear, 1 to 2 inches thick.

By-products: small pieces glued together for veneer cores.

Red birch.

New England; Lake States; Middle West.

Of total amount of red birch manufactured 0.2 per cent used in this industry.

Pipe organ cases.

Finishes to imitate mahogany.

Rough, first grade, 1 inch thick.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 1.8 per cent used in this industry.

Accordions; benches; pianos; moldings on pianos and player pianos; veneer cross band work on pianos.

Hard, beautiful finish.

Accordions: veneer 1 inch thick.

Moldings: rough, clear, 1 inch thick.

Pianos, benches: burl, 1 inch thick, or burl veneer, $\frac{1}{8}$ inch thick.

2,500 square feet of veneer used in this industry.

Oregon maple.

 $\mathbf{Oregon}.$

Of total amount of Oregon maple manufactured 9.8 per cent used in this industry.

Action work and cases on pianos.

Hard, strong, good finish.

Rough, best, 2 to 3 inches thick.

White oak, quarter-sawed (eastern oak). South; Middle West. Of total amount of quartered white oak manufactured 0.1 per cent

Piano benches, legs and pilasters; pipe organ cases.

Hard; good flake.

used in this industry.

Rough, clear, 1 to 2 inches thick.

Benches: 1,000 feet of veneer, \frac{1}{8} inch thick, used.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 0.2 per cent used in this industry.

Facings and skeletons of pianos.

Strong, tough.

Surfaced on two sides, clear, 1 inch thick.

Australian mahogany.

Australia

Of total amount of Australian mahogany manufactured 100 per cent used in this industry.

Pianos, benches.

Beauty of finish.

Rough, crotch, veneer, 1 inch thick.

Redwood.

California.

Of total amount of redwood manufactured 0.1 per cent used in this industry.

Cases for pianos and player pianos; pipes and chests for pipe organs. Light, easily worked.

Cases: surfaced on two sides, clear, 1 inch thick.

Pipes, chests: rough, clear, 1, 2 and 3 inches thick.

By-products: small pieces glued together for laminated veneer cores. Note.—There is some prejudice in the trade against the use of redwood for piano parts, although it should be fit for this purpose.

White oak, plain (eastern oak).

Middle West: South.

Piano and pipe organ cases.

Strong, fine finish.

Rough or surfaced, clear, 1 to 3 inches thick.

Douglas fir (Oregon pine, Washington fir).

Oregon: Washington.

Backs and frames of pianos and player pianos; veneer cores.

Strong, cheap, takes veneer well.

Surfaced on two sides, 1 to 2 inches thick: frames, clear stock: backing, common grades.

Eastern maple (rock maple, hard maple). New England; Lake States;

Middle West; South.

Of total amount of eastern maple manufactured 1.6 per cent used in this industry.

Action work on pipe organs; benches; pianos; pin blocks and tuning pins in pianos; veneering in accordions.

Hard, light, strong, easily worked, good finish.

Rough, clear, 1 to 2 inches thick: 4,500 feet of high figured veneer used.

Oregon ash.

Of total amount of Oregon ash manufactured 4.1 per cent used in this industry.

Action work on pianos.

Rough, best, all thicknesses.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Pipe organs.

Rough, clear, 1 to 2 inches thick.

TABLE	18.	Instruments,	MUSICAL.
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Kinds of wood,	Quantity used annually.		Average cost per 1,000 feet.		Total cost.	Grown in California, feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F.	o. b. 1	factory.	measure.	measure.
Redwood	156,200	61.8	\$36	22	\$5,658	156,200	
White oak (plain)	22,200	8.8	114	77	2,548		22,200
Douglas fir	16,400	6.5	27	02	448		16,400
Eastern maple	15,915	6.8	117	42	1,869		15,915
Yellow poplar	12,000	4.7	98	83	1,120		12,000
Sitka spruce	6,500	2.6	85	46	555		6,500
American mahogany	6,250	2.5	171	20	1.070		6,250
Sugar pine	4,700	1.9	62	02	291	4,700	
Red birch	8,000	1.2	65	00	195		3,000
Black walnut	2,015	0.8	227	30	458		2,015
Oregon maple	2,000	0.8	63	00	126		2,000
White oak (quarter-sawed)	1.870	0.7	138	00	258		1,870
Eastern ash	1,600	0.6	110	00	176		1,600
Australian mahogany	1,090	0.4	185	00	135		1,000
Oregon ash	600	0.2	110	00	66		600
Lawson cypress	500	0.2	65	00	33		500
Total	252,750	100.0	\$59	85	\$15,001	160,900	91,850

INSTRUMENTS, PROFESSIONAL AND SCIENTIFIC.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Of total amount of Lawson cypress manufactured 0.3 per cent used in this industry.

Pencil blocks.

Strong; finishes well; whittles easily.

Rough, common and shop, 1 inch thick.

By-products: shavings used for bedding cattle.

Norg.-The blocks are shipped to Germany.

Red birch.

New England; Lake States; Middle West.

Of total amount of red birch manufactured 0.4 per cent used in this industry.

Rubber stamp mounts.

Red color; fine finish.

Moldings, 1 to 1 inch thick.

Eastern maple. New England; Lake States; Middle West; South. Of total amount of eastern maple manufactured 0.6 per cent used in this industry.

Backing for rubber stamps; bench tops and vises; level rods; palettes; triangles; tripod legs in surveying instruments; T-squares.

Hard; fine grain; does not warp.

Backing: finished, 3-16 to 3 inches thick.

Bench tops, vises: rough, clear, 1 to 2 inches thick. Level rods, tripod legs: rough, No. 1, 1 inch thick.

Triangles, T-squares, palettes: surfaced, No. 1, 1/8 inch thick.

Western yellow pine (white pine).

California.

Biological cases.

Rough, clear, 1 to 11 inches thick.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 0.4 per cent used in this industry.

Tripod legs on surveying instruments.

Tough, takes good finish; does not check.

Rough, first quality, 11 to 2 inches thick.

American mahogany (west coast mahogany).

South and Central

America.

Of total amount of American mahogany manufactured 0.2 per cent used in this industry.

Surveying instrument cases.

Strong, stands extremes of heat and cold without distortion.

Rough, clear, ½ inch thick.

Redwood.

California.

Map cases.

Light, easily worked.

Rough, clear, $\frac{1}{2}$ and 1 inch thick.

Sugar pine.

California.

Drawing boards; extension level rods.

Light, does not check or warp.

Rough, clear, 1 inch thick.

Incense cedar.

California.

This material has proven to be a good wood for the cheaper grades of pencils. Two large pencil manufacturing concerns are now utilizing it for this purpose.

TABLE 19. INSTRUMENTS, PROFESSIONAL AND SCIENTIFIC.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 feet.		Grown in California. feet, board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	measure.	measure.
Lawson cypress	10,000	80.9	\$13 0 0	\$130		10,000
Red birch	6,250	19.3	120 00	750		6,250
Eastern maple	5,937	18.3	84 88	504		5,93
Western yellow pine	4,000	12.3	48 00	192	4,000	
Eastern ash	2,500	7.7	135 00	337		2,50
American mahogany	2,000	6.2	175 00	350		2,00
Redwood	1,220	3.8	43 86	54	1,220	
Sugar pine	500	1.5	100 00	50	500	
Total	82,407	100.0	\$73 04	\$2,367	5,720	26,68

LAUNDRY APPLIANCES.

Douglas fir-Not specified.

Eastern ash-Not specified.

Boxwood sawdust.

Of total amount of boxwood sawdust manufactured 25.0 per cent used in this industry.

Chemically prepared trays, etc.

Colorless; free from acid and resin; can be finely pulverized; takes acid and stain well.

Kiln dried, screened, 35 pound sacks.

American mahogany sawdust.

Chemically prepared trays, etc.

Natural color.

Kiln dried, screened, 35 pound sacks.

Western yellow pine sawdust (white pine).

Laundry floors, trays, etc.

Bleaches well; takes color and stain.

Note.—The finely pulverized sawdust is mixed with chemicals, according to a more or less secret process. It forms a strong compound, which can be laid like plaster. Sanitary, waterproof, and has considerable decorative value.

Lawson cypress (white cedar, Port Orford cedar) sawdust.

See western yellow pine sawdust.

TABLE 20. LAUNDRY APPLIANCES.

Kinds of wood.	Quantity used annually.		Average cost per 1,000 feet.	Total cost.	Grown in California. feet. board	Grown out of California, feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	moasure.	measure.
Douglas fir	2,500	83.3	· \$4 5 00	\$112		2,50
Eastern ash	500	16.7	110 00	55		50
Total	3,000 Pounds.	100.0	\$55 83 Per M.	\$167		3,00 Pounds.
Boxwood sawdustAmerican mahogany saw-	43,750		\$657 00	288		43,75
dust	2,000		11 00	22		2,00
Total				\$477		

MACHINE PARTS.

Douglas fir (Oregon pine, Washington fir, yellow fir).

Oregon; Washington.

Of total amount of Douglas fir manufactured 0.1 per cent used in this industry.

Frames of mill machinery; oil derrick construction; portable rigs.

Strong; cheap.

Rough, clear and select, 1 to 12 inches thick.

Redwood.

California.

Mill machinery construction; engine frames.

Fairly strong; nails well; used where dampness is a factor, or where the color is desired as a part of the machines.

Mill machinery: surfaced on two sides, clear, 1 inch thick.

Engine frames: rough, common, 2 to 8 inches thick:

White oak, plain (eastern oak).

South; Middle West.

Of total amount of white oak manufactured 0.1 per cent used in this industry.

Cylinder blocks; machine timbers.

Strong; tough; durable.

Rough, clear, 1 to 8 inches thick.

Sitka spruce.

Oregon; Washington.

Mill machinery.

Surfaced on two sides, good grades, 1 inch thick.

Eastern maple (hard maple).

New England; Lake States; Middle West: South.

Of total amount of eastern maple manufactured 1.1 per cent used in this industry.

Brake band blocks; friction blocks; mill cogs.

Strong; tough; true to form when worked up.

Rough or surfaced, clear, 1 to 8 inches thick.

Hickory.

South; Middle West.

Of total amount of hickory manufactured 1.4 per cent used in this industry.

Friction blocks; springs and eccentric slats on flour and feed mill machinery.

Springy; tough.

Surfaced, clear, 3 to 4 inches thick.

Sugar pine.

California.

Special machines.

Light, easily worked.

Rough, clear, 1 inch thick.

California blue gum.

California.

Of total amount of California blue gum manufactured 7.2 per cent used in this industry.

Driving blocks in oil well work.

Logs, dry, 8 to 12 inches in diameter.

Western yellow pine (yellow pine).
Flooring on concrete mixers.

California.

Cheap.

No. 1 common.

TABLE 21. MACHINE PARTS.

Kinds of wood,	Quantity used annually.		Average cost pe 1,000 fee	r	Total cost.	Grown in California, feet, board	Grown out of California. feet, board
	Feet, board measure.	Per cent.	₽. (o. b.	factory.	measure.	measure.
Douglas fir	117,100	46.8	\$29	12	\$3,410	1	117,100
Redwood	58,500	28.4	85	61	2.084	58,500	
White oak (plain)	80,000	12.0	70	00	2,100		30,000
Sitka spruce	15,000	6.0	80	00	450		15,000
Eastern maple	11,000	4.4	110	50	1,215		11,000
Hickory	8,500	8.4	118	08	961		8,500
Sugar pine	4,000	1.6	90	00	360	4,000	
California blue gum	4,000	1.6	80	00	320	4,000	
Western yellow pine	2,000	0.8	23	00	46	2,000	
Total	250,100	100.0	\$43	77	\$10,946	68,500	181,600
Lignum vitæ	1,000	lbs., 4c	per lb.		40		1,000
					\$10,986		

MACHINERY AND APPARATUS, ELECTRICAL.

Eastern maple. New England; Lake States; Middle West; South. Of total amount of eastern maple manufactured 1.6 per cent used in this industry.

Bases for relays; brake-pads; electric cabinets; forms for winding electric coils; telephone wire moldings.

Close grained; hard; tough; for moldings it will receive screws both endwise and crosswise.

Rough or surfaced, clear and select, 1 to 6 inches thick.

White oak, plain (eastern oak).

Middle West; South.

Bases for relays; controllers; electric battery trays; electric cabinets. Hard; strong; tough.

Rough or surfaced, $\frac{1}{2}$ to 8 inches thick.

Siberian oak, plain (Japanese oak).

Japan; Siberia.

Of total amount of plain Siberian oak manufactured 0.6 per cent used in this industry.

Electric battery trays and trim.

Rough, No. 1 and 2, 3 to 1 inch thick.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 3.7 per cent used in this industry.

Electric cabinets.

Boards, planks and blocks, 1 to 6 inches thick.

TABLE 22. MACHINERY AND APPARATUS, ELECTRICAL.

Kinds of wood.	Quantity used annually.		Average cost per 1,000 feet.	Total cost.		Grown out of California. feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	feet, board measure.	measure.
Eastern maple	15,850 12,750 6,250 4,200	40.6 32.7 16.0 10.7	\$77 28 77 92 82 00 75 00	\$1,225 998 513 315		15,850 12,750 6,250 4,200
Total	39,050	100.0	\$78 00	\$3,046		39,050

MATCHES.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Tough; splits well.

Bolts, best quality.

PATTERNS.

Redwood.

California.

Of total amount of redwood manufactured 0.5 per cent used in this industry.

Local patterns.

Soft; cheap; easily worked; does not warp or twist; shrinks very little in California climate.

Rough, clear, 1 to 4 inches thick.

Sugar pine.

California.

Of total amount manufactured 0.2 per cent used in this industry.

Patterns, models.

Soft; non-resinous; easily worked; glues and nails well; durable; does not warp.

Patterns: rough, clear, 1 to 4 inches thick. Models: surfaced, clear, 1 to 4 inches thick.

Douglas fir (Oregon pine, Washington fir).

Oregon; Washington.

Foundry flasks.

Wears well.

Rough, medium grades, 1 to 6 inches thick.

Spanish cedar.

Mexico.

Of total amount of Spanish cedar manufactured 3.1 per cent used in this industry.

Standard and ornamental patterns.

Soft; open grained; strong; easily carved; smooth finish; does not split or warp; holds sharp corners and edges.

Rough or surfaced, clear, 1 to 3 inches thick.

Western yellow pine (white pine).

California.

Common patterns and models.

Light; fairly strong; easily worked.

Rough or surfaced, clear, 1 to 2 inches thick.

American mahogany (Honduras mahogany).

Central America.

Of total amount of American mahogany manufactured 1.3 per cent used in this industry.

Plain and ornamental patterns.

Solid; close grained; easily worked; carves well; holds shape well; wears well and long in sand.

Rough, clear, 1 to 4 inches thick; as thin as 3-16 inch thick for ornamental patterns.

Eastern maple. New England; Lake States; Middle West; South. Of total amount of eastern maple manufactured 0.5 per cent used in this industry.

Patterns; models; mold and core boxes; standard patterns.

Straight; close grained; strong; easily worked.

Rough or surfaced, No. 1, 1 to 4 inches thick.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 0.7 per cent used in this industry.

Small patterns and models.

Close grained; tough; easily chiseled.

Rough, first grade, 1 to 3 inches thick.

Philippine mahogany (Narra).

Philippine Islands.

Of total amount of Philippine mahogany manufactured 4.4 per cent used in this industry.

Standard patterns.

Lasts well in sand.

Surfaced, clear 11 and 2 inches thick.

By-products: sawdust used in the manufacture of chemically prepared floors, trays, washboards, etc.

White oak, plain (eastern oak).

Middle West; South.

Patterns; models.

Resists wearing action of sand.

Patterns: rough, clear, 1 to 2 inches thick. Models: surfaced, clear, \(\frac{1}{4}\) to 4 inches thick.

TABLE 23. PATTERNS.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 fee	.	Total cost.	Grown in California. feet. board	Grown out of California. feet, board
	Feet. board measure.	Pe- cent.	F. o. b. factory.			measure.	measure.
Redwood	517,000	74.9	\$42	81	\$22,133	517,000	
Sugar pine	59,350	8.6	66	39	3,940	59,350	
Douglas fir	49,090	7.1	21	73	1,067		49,09
Spanish cedar	20,450	3.0	151	72	3,103		20,45
Western yellow pine	18,000	2.6	80	83	1,455	18,000	
American mahogany	15,200	2.2	195	19	2,967		15,20
Eastern maple	5,100	0.7	87	96	448		5,10
Yellow poplar	4,100	0.6	108	54	445		4,10
Philippine mahogany	1,500	0.2	170	00	255		1,500
White oak (plain)	500	0.1	120	00	60		. 500
Total	690,290	100.0	\$51	97	\$35,873	594,350	95,94

PLANING MILL PRODUCTS.

Redwood.

California.

Of total amount of redwood manufactured 44.9 per cent used in this industry.

Exterior finish chiefly; interior finish.

Contains no pitch; easily worked; good finish; imitates mahogany; does not split; holds paint well; durable when exposed to weather.

Rough, all grades, 1 to 12 inches thick.

By-products: brackets, core stock for veneered doors, flower and surveyor's stakes; small moldings; spindles, stair balusters; shavings for horse bedding; sawdust for packing ice and litter in poultry houses.

Note.—Some manufacturers prefer redwood from Humboldt and Del Norte counties.

Douglas fir (Oregon pine, red fir, yellow fir,

California; Oregon;

Washington fir).

Washington.

Of total amount of Douglas fir manufactured 35.9 per cent used in this industry.

Flooring; chiefly interior finish.

Strong; works easily; cut slash grain it gives a beautiful finish; imitates more costly woods, especially oak; does not scar readily, when used as flooring it is often stained to represent hardwoods.

Rough, clear, 1 to 2 inches thick; surfaced, $\frac{7}{8}$ inches thick.

By-products: beehive supplies, core stock for veneered doors, garden and surveyor's stakes, small moldings; sawdust and shavings for packing ice.

Note.—Some manufacturers claim that the fir from Washington is softer than that from Oregon, easier to work, and does not split so easily.

Western yellow pine (white pine, mountain pine).

California; Oregon; Nevada; Arizona.

Of total amount of yellow pine manufactured 0.8 per cent used in this industry.

Interior finish.

Soft; good grain; easily worked; good natural finish; takes paint well; owing to its color takes a good enamel finish.

Rough, all grades, 1 to 4 inches thick.

By-products: small moldings.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Of total amount of Lawson cypress manufactured 57.0 per cent used in this industry.

Interior finish.

Soft; durable; finishes to imitate mahogany; best wood for enamel finish on account of its tight grain.

Rough, clear and select, 1 to 2 inches thick.

By-products: core stocks for veneered doors; small moldings.

Sugar pine.

Oregon; California.

Of total amount of sugar pine manufactured 3.8 per cent used in this industry.

Cut siding; interior finish; moldings.

Light; soft; easily worked; handsome; holds nails well; takes enamel finish.

Rough, clear, 1 to 2 inches thick.

By-products: core stock for veneered doors.

White oak, plain (eastern oak).

Middle West; South.

Of total amount of plain white oak manufactured 4.4 per cent used in this industry.

Flooring; interior finish.

Hard; good polish and appearance; wears well.

Flooring: surfaced, first grade, 5-16, § and § inch thick.

Finish: rough, clear, 1 to 2 inches thick: 155,000 square feet of veneer, 1-16, $\frac{1}{8}$ and 3-16 inch thick, used.

By-products: cores for veneered work; parquetry floors; small moldings; surveyor's stakes.

Siberian oak, plain (Japanese oak).

Japan; Siberia.

Of total amount of plain Siberian oak manufactured 66.6 per cent used in this industry.

Interior finish: moldings; parquetry and strip floors.

Beauty of finish.

Rough, No. 1 and 2, 1 to 11 inches thick.

Red birch.

New England; Lake States; Middle West.

Of total amount of red birch manufactured 45.9 per cent used in this industry.

Interior finish; flooring.

Hard; strong; beautiful grain; finishes to imitate more costly woods; brings out the design in inlaid floors.

Finish: rough, first and second grades, 1 to 2 inches thick: 31,500 square feet of veneer, \(\frac{1}{3}\) inch thick, used.

Flooring: rough, first and second grade, 1 to $1\frac{1}{2}$ inches thick; or, surfaced, clear $\frac{\pi}{4}$ inch thick.

By-products: cores for veneered work, short veneers for facing table tops; sawdust for refrigeration; shavings for stable bedding.

Eastern maple (hard maple, white maple). New England; Lake States; Middle West; South.

Of total amount of eastern maple manufactured 56.9 per cent used in this industry.

Interior finish; strips and parquetry floors.

Hard; light; easily worked; polishes well; imitates more costly woods. Finish: rough, clear, 1 to 2 inches thick, some bird's-eye maple.

Flooring: principally surfaced, some rough, first and second grades, 5-16 to 1 inch thick.

By-products: moldings; surveyor's stakes.

White oak, quarter-sawed (eastern oak). South; Middle West.

Of total amount of quartered white oak manufactured 35.9 per cent used in this industry.

Interior finish; panels; strip and parquetry floors.

Hard; strong; fine finish; polishes well.

Finish: rough, first grade, 1 inch thick, used.

Panels: 10,360 square feet of veneer, 1-16 inch thick, used.

Flooring: surfaced, clear, 5-16, \(\frac{3}{8}\), \(\frac{7}{8}\) and 1 inch thick.

American mahogany (tobasco mahogany).

South and Central

America; West Indies.

Of total amount of American mahogany manufactured 30.0 per cent used in this industry.

Interior finish; strip, inlaid, and parquetry floors.

Hard; beautifully grained; easily worked; polishes well; glues and joins well.

Finish; rough, first and second grade, § to 6 inches thick; 86,000 square feet of veneer, 1-20 and 3-16 inch, used.

Flooring: rough, first and second grade, $\frac{7}{8}$ to $1\frac{1}{2}$ inches thick, used.

By-products: sawdust and shavings for stable bedding.

Sitka spruce.

Oregon; Washington.

Of total amount of Sitka spruce manufactured 0.4 per cent used in this industry.

Interior finish.

Light, cheap.

Rough, clear and select, 1 inch thick.

Siberian oak, quarter-sawed (Japanese oak).

Siberia; Japan.

Of total amount of quartered Siberian oak manufactured 58.1 per cent used in this industry.

Interior finish.

Beauty of grain.

Rough, first and second grade, 1 to 2 inches thick.

By-products: short veneers for facing table tops.

Beech.

South; Middle West.

Of total amount of beech manufactured 100.0 per cent used in this industry.

Inlaid floors.

Brings out inlaid designs.

First and second grade, 1 to 1½ inches thick.

Red fir.

California.

Of total amount of red fir manufactured 2.6 per cent used in this industry.

Interior finish.

Good grain.

Rough, 1 to 4 inches thick.

Genisaro (Jenizaro.)

Of total amount of genisaro manufactured 44.9 per cent used in this industry.

Interior finish.

Beauty of grain.

Rough, first, second and third grades, 1 to 2 inches thick; 25,000 square feet of veneer, 1-20 and 3-16 inch thick, used.

Juana costa. Mexico.

Of total amount of juana costa manufactured 100.00 per cent used in this industry.

Interior finish.

Beauty of grain.

Rough, clear, 1 to 2 inches thick.

By-products: short veneers for facing table tops.

White fir.

California.

Of total amount of white fir manufactured 0.5 per cent used in this industry.

Flooring; moldings.

Logs, all sizes and grades.

Incense cedar.

California.

Of total amount of incense cedar manufactured 2.3 per cent used in this industry.

Flooring; moldings.

Logs, all sizes and grades.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 32.8 per cent used in this industry.

Inlaid floors; interior finish.

Appearance: polish brings out inlaid designs.

Floorings: surfaced, $\frac{7}{8}$ inch thick, or rough, No. 1 and 2, 1 to $1\frac{1}{2}$ inches thick.

Finish: rough, clear, 1 to 2 inches thick.

Philippine mahogany (Narra).

Philippine Islands.

Of total amount of Philippine mahogany manufactured 71.0 per cent used in this industry.

Interior finish.

Rough, No. 1, 1 to 3 inches thick.

PLATE VII. Display of samples of oak, birch, maple, walnut, and South American wood flooring.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 1.5 per cent used in this industry.

Inlaid floors; interior finish.

Hard; good appearance; polishes well.

Flooring: thin strips, best grade, 5-16 inch thick.

Finish: rough, clear, 1 to 2 inches thick.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 1.8 per cent used in this industry.

Cores for panel work; interior finish.

Cores: 5,000 square feet of rotary cut veneer, 3-16 inch thick, used.

Finish: rough, clear, § to 1½ inches thick.

By-products: moldings; short veneers for facing table tops.

Red Bean.

Australia.

Of total amount of red bean manufactured 100.0 per cent used in this industry.

Parquetry; strip floors.

Rough, clear, 1 inch thick.

Circassian walnut.

Turkey.

Of total amount of Circassian walnut manufactured 90.6 per cent used in this industry.

Interior finish.

Beauty of grain.

Rough, first grade, 1 inch thick and over.

Red gum.

Middle West; South.

Of total amount of red gum manufactured 1.3 per cent used in this industry.

Interior finish.

Rough, clear, 1 to 2 inches thick.

Koa.

Hawaiian Islands.

Of total amount of koa manufactured 91.8 per cent used in this industry.

Interior finish.

Rough, first grade, 1 inch thick and over; 500 square feet of veneer, 1-20 inch thick, used.

African mahogany.

Africa.

Of total amount of African mahogany manufactured 16.3 per cent used in this industry.

Inlaid floors; interior finish.

Rough, No. 1 and 2, 1 to 2 inches thick.

Oregon oak.

Oregon.

Of total amount of Oregon oak manufactured 0.2 per cent used in this industry.

Interior finish.

Rough, merchantable to clear, all thicknesses.

Prima vera (white mahogany).

Mexico.

Of total amount of prima vera manufactured 7.2 per cent used in this industry.

Interior finish.

Rough, No. 1, 1 to 2 inches thick.

Elm.

Michigan; Middle West.

Of total amount of elm manufactured 1.6 per cent used in this industry.

Panels.

Finished, 1 to 5 inch thick.

Teak.

Burmah.

Of total amount of teak manufactured 2.7 per cent used in this industry.

Interior finish.

Rough, clear, 1 inch thick.

Spanish cedar.

Mexico.

Of total amount of Spanish cedar manufactured 0.3 per cent used in this industry.

Interior finish.

Rough, clear, 1 to 2 inches thick.

Red oak.

South; Middle West.

Of total amount of red oak manufactured 1.9 per cent used in this industry.

Interior finish.

Rough, No. 1, 1 to 4 inches thick.

TABLE 24. PLANING MILL PRODUCTS.

Kinds of wood.	Quantity annual		Average cost per 1,000 feet.	Total cost.	Grown in California.	Grown out of California.
inids of wood.	Feet, board measure.	Per cent.	F . o. 1	. factory.	feet, board measure.	feet, board measure.
Redwood	49,080,378	49.8	825 72	\$1,262,847	49,080,378	
Douglas fir	89,084,046	89.6	28 21		6,044,415	32,989,63
Western yellow pine	2,165,011	2.2	45 07			
Lawson cypress	1,756,257	1.8	50 81			1,668,42
Sugar pine	1,317,060	1.3	43 87	57,779		
White oak (plain)	1,060,507	1.1	94 06			1,050,50
Siberian oak (plain)	694,425	0.7	90 82			694,42
Red birch	684,750	0.7	78 76			684,75
Eastern maple	579,747	0.6	77 86	44,849		579,74
White oak (quarter-sawed)	540,675	0.5	88 39			540,67
American mahogany	341,751	0.8	179 55			
Sitka spruce	301,000	0.8	22 75			301.00
Siberian oak (quarter-	•			1		
sawed)	200,412	0.2	118 75	23,800		200.41
Beech	160,000	0.2	100 00			
Red fir	122,000	0.1	82 79			
Genisaro	112,190	0.1	125 85			l
Juana costa	90,500	0.1	114 86			90,50
White fir	62,500		25 00			
Incense cedar	82,500		25 00	-,		
Black walnut	87,000		134 86			37,00
Philippine mahogany	23,990		158 85			23.99
Ash	10,700		70 00			10,70
Yellow poplar	10,810		73 00			10,31
Red bean	10,000		120 00			
Circassian walnut	7,250		183 45			7.25
Red gum (Missouri)	6,000		85 00			6.00
Koa	5.625		155 55			5,62
African mahogany	5,500		213 83			5,50
Oregon oak	5,000		100 00			5.00
Prima vera	2,643		151 85			2.64
Elm	2,500		75 00	1		2.50
Teak	2,445		190 28			2,44
Spanish cedar	2,000		140 00			2,00
Red oak	1,750		122 86			1
ucu var	1,750		122 60	210		1,70
Total	98,488,422	100.0	• \$\$1 20	\$3,078,410	58,946,684	89,541,73

PRINTING MATERIAL.

Cherry.

Middle Atlantic States.

Of total amount of cherry manufactured 86.8 per cent used in this industry.

Backing for zinc and copper plates; mounting cuts.

Solid; tough; easily worked; nails fairly well; does not warp; strong enough to uphold impression in printing press.

Surfaced, well seasoned, 15-16, ‡ and 1 inch thick.

Note.—The strips are glued together to make boards 12 inches wide.

TABLE 25. PRINTING MATERIALS.

Kinds of wood.	Quantity used annually.		Average cost per 1,000 feet.	Total cost.	Grown in California,	Grown out of California.
amus or wood,	Feet, board measure.	Per cent.	F. o. b.	factory.	feet, board measure.	feet, board measure.
Cherry	6,575	100.0	\$ 153 88	\$1,012		6,575

PULLEYS AND CONVEYORS.

Douglas fir (Oregon pine).

Oregon; Washington.

Pulley stiles.

Strong; cheap.

Rough; all grades and sizes.

White oak, plain (eastern oak).

Middle West; South.

Conveyor slats.

Strong.

Surfaced, clear, 3 inches thick.

PULP AND PAPER.

White fir.

California.

Pulp.

Long, strong fiber.

Cordwood, bodywood of tree, 6 to 12 inches in diameter.

Red fir.

California.

Pulp.

Cordwood, bodywood of tree, 6 to 12 inches in diameter.

Lodgepole pine (tamarack).

California.

Small quantities of this are also used, mixed with red and white fir.

PUMPS.

Douglas fir (Oregon pine).

Oregon; Washington.

Pump frames and skids.

Strong; easily worked; holds its shape.

Rough, select and common, 3 to 10 inches thick.

TABLE 26. Pumps.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 feet.	Total cost.		Grown out of California.
Zinds of wood,	Feet, board measure.	Per cent.	F. o. b.	factory.	feet, board measure.	feet, board measure.
Douglas fir	49,980	100.0	\$22 39	\$1,119		49,980

REFRIGERATORS, KITCHEN CABINETS.

Douglas fir (Oregon pine, Washington fir). Oregon; Washington.

Of total amount of Douglas fir manufactured 0.2 per cent used in this industry.

Brine tanks; cold storage rooms; floors; framework; ice boxes; joists; outside finish; refrigerators; studding.

Strong; cheap; easily worked.

Floors; outside finish; surfaced, clear, 3 to 1 inch thick.

Framework: rough, clear, 2 inches thick.

Joists, studding: rough, merchantable, 1 to 6 inches thick.

Sitka spruce.

Oregon; Washington.

Inside walls and shelves of cold storage rooms and refrigerators.

Tough; odorless.

Surfaced on one side, select, 1 inch thick.

Siberian oak, plain (Japanese oak).

Japan; Siberia.

Of total amount of plain Siberian oak manufactured 0.7 per cent used in this industry.

Ice boxes; refrigerators.

Surfaced on two sides, No. 1: $\frac{3}{8}$ inch thick for ice boxes; $1\frac{1}{8}$ and $1\frac{3}{4}$ inches thick for refrigerators.

Redwood.

California.

Mud sills for brine tanks, ice boxes, refrigerators, etc.

Durable against decay in damp places.

Rough, common, 1 to 6 inches thick.

White oak, plain (eastern oak).

Middle West; South.

Flooring and outside finish for cold storage rooms and refrigerators. Hard; durable against decay and wear.

Surfaced on two sides, first and second grades, 1 to 3 inches thick.

Eastern maple (white maple).

New England; Lake States;

Middle West; South.

Of total amount of eastern maple manufactured 0.1 per cent used in this industry.

Cold storage rooms; finish; ice boxes; refrigerators.

Surfaced on one or two sides, No. 1 and 2, $\frac{3}{8}$ to $1\frac{3}{4}$ inches thick.

American mahogany.

South and Central America.

Panel work on ice refrigerators and cold storage rooms.

Veneer.

TABLE 27. REFRIGERATORS AND KITCHEN CABINETS.

Kinds of wood.	Quantity used annually.		Average cost per 1,000 feet.		Total cost.	Grown in California, feet, board measure.	Grown out of California. feet, board
	Feet, board measure.	Per cent.	F. o. b. factory.				measure.
Douglas fir	208,600	76.9	\$26	06	\$5,436		208,600
Sitka spruce	44,500	16.4	86	52	1,625		44,500
Siberian oak (plain)	6,800	2.5	90 (00	612		6,800
Redwood	6,000	2.2	82	50	195	6,000	
White oak (plain)	8,000	1.1 ,	70 (00	210		3,000
Eastern maple	1,500	0.6	60 (00	90		1,500
American mahogany	800	0.8	125	00	100		800
Total	271,200	100.0	\$30 4	19	\$8,268	6,000	265,200

ROLLERS, SHADE AND MAP.

Sitka spruce.

Oregon; Washington.

Battens and frames for scenery rollers.

Light; tough; cheap; works easily.

Surfaced on four sides, clear, 1 inch thick.

Sugar pine.

California.

Battens and frames for scenery rollers.

Clear; light; straight; fairly tough; works easily.

Surfaced on four sides, clear, 1 inch thick.

Douglas fir (Oregon pine).

Oregon; Washington.

Frames for scenery rollers.

Strong.

Surfaced on four sides, clear, 1 inch thick.

Redwood.

California.

Moldings and rounds for mounting maps.

Light; easily worked.

Surfaced, clear, 1 inch thick.

SADDLES AND HARNESS.

Sugar pine.

California.

Saddle trees.

Fairly pliable; an easy burden on a horse.

Rough, shop, 2 inches thick.

Douglas fir (Oregon pine).

Oregon; Washington.

Saddle trees.

Hard; strong; cheap; comparatively light.

Rough, merchantable, 4 inches thick.

Sitka spruce.

Oregon; Washington.

Saddles.

Light; tough; an easy burden on a horse.

Rough, select, 1 inch thick.

WOOD-USING INDUSTRIES OF CALIFORNIA.

SASH, DOORS, BLINDS, AND GENERAL MILLWORK.

Redwood. Califor

Of total amount of redwood manufactured 36.9 per cent used in industry.

Balusters; cabinet work; columns; doors; posts; sash; screen sto stairs.

Balusters, columns, posts: durable against decay; rough, common clear, 4 to 10 inches thick; chiefly used where exposed to weather.

Cabinet work: light, easily worked; rough, select, 1 inch thick.

Doors, sash: contains no pitch, soft, easily worked, finishes well, ta paint readily, does not shrink, stands exposure to the weather; rou clear, 1 to 12 inches thick.

Screen stock: nails and weathers well; rough, clear, 1 inch thick. Risers, stringers, exterior stair work: light, durable against dec

rough, clear, 1 to $1\frac{1}{2}$ inches thick.

By-products: balusters, brackets, small turnings, wedges; sawd used for packing ice, poultry-house litter, and sweeping; shavings u for stable bedding.

Western yellow pine (white pine).

Californ

Of total amount of yellow pine manufactured 13.6 per cent used this industry.

Doors; grills; inside screens; sash.

Doors, sash: light, soft, fairly strong, easily worked, nails well in t strips, takes good natural finish or can be made to imitate more cos woods; shrinks little, does not warp or check, not so good as sugar pi but cheaper; rough, shop, 1 to 4 inches thick.

By-products: § inch strips used in the manufacture of picture fram scraps glued together for veneered doors and plaster cores; sawdust packing ice and stable bedding; shavings for stable bedding.

Douglas fir (Oregon pine, Washington

Californ

fir, mountain pine).

Oregon; Washingt

Of total amount of Douglas fir manufactured 32.1 per cent used this industry.

Balusters; cabinet work; columns; doors; mantels; newel pos risers; stepping stringers; window frames.

Balusters, columns, newel posts: good, smooth finish; rough, sel and common, 2 to 4 inches thick.

Doors: fine finish (especially in slash grain effects), capable of in tating oak and other hardwoods; hardness prevents scarring; should thoroughly kiln dried to prevent checking, warping and opening of piseams; rough, clear or select, 1 to 3 inches thick.

Risers, stepping stringers: strong, tough, cheap, easily worked, dable under wear; rough, clear, 1 to 4 inches thick.

Window frames: hard, cheap, good grain, fine finish, especially adapted for pulley-jambs; rough, common to clear, 1 to 2 inches thick.

By-products: balusters, brackets, ceiling cores, cores for veneered work, corner blocks, cresting, piling sticks, small spindles, stakes, wedges.

Sugar pine.

California; Oregon.

Of total amount of sugar pine manufactured 34.1 per cent used in this industry.

Doors; sash; screen frames.

Soft; straight grained; good finish; shrinks little; not likely to warp; stands exposure to the weather.

Rough, all grades, 1 to 4 inches thick.

By-products: balusters, brackets, box-shooks, ceiling cores, core stock for veneers, corner blocks, cresting, piling sticks, plaster cores, small moldings, surveyor's stakes, washboard stock; shavings for packing; sawdust for stable bedding; § inch strips run into picture frames.

Sitka spruce.

Oregon; Washington.

Of total amount of spruce manufactured 5.4 per cent used in this industry.

Cabinet work; doors, screen windows.

Cheap; works easily; stands up well.

Cabinet work: rough, clear or select, 1 to 4 inches thick.

Screen windows: rough, clear, 4 by 4 inches.

Incense cedar.

California.

Of total amount of incense cedar manufactured 93.3 per cent used in this industry.

Doors; sash.

Available; cheap; required to be cut in logging other species.

Rough, shop grades, 1 to 2 inches thick.

White fir.

California.

Of total amount of white fir manufactured 3.6 per cent used in this industry.

General mill work.

Available; cheap; logged with more desirable species.

Rough, shop grades, 1 to 2 inches thick.

Red fir.

California.

Of total amount of red fir manufactured 8.7 per cent used in this industry.

Doors, sash.

Available; cheap; logged with more desirable species.

Rough, shop and common, 1 to 2 inches thick.

Lawson cypress.

Oregon.

Of total amount of Lawson cypress manufactured 9.3 per cent used in this industry.

Cabinet work; doors; grills; mantels; reversible sash; sash; screens; shoes and strips for sash.

Tough; good finish; durable against decay.

Rough, clear and select, 1 to 2 inches thick.

By-products: cores for veneered work, pencil slats, washboard stock; sawdust for cleaning purposes; shavings for stable bedding.

White oak, plain (eastern oak).

Middle West; South.

Of total amount of plain white oak manufactured 0.9 per cent used in this industry.

Cabinet work; doors; sash; stair work.

Hard; strong; easily worked; good finish; durable against wear.

Doors, sash (greater portion veneered): rough, clear, 1 to 2 inches thick.

Risers: rough, clear, 1 to 2 inches thick.

Stepping: rough, first grade, 1 to 1½ inches thick.

Stringers and posts of greater thicknesses.

By-products: garden stakes, post tops, small moldings and turnings, wedges; sawdust manufactured into a sweeping compound.

American mahogany.

Mexico; South and Central America.

Of total amount of American mahogany manufactured 15.5 per cent used in this industry.

Cabinet work; doors; general stair work; mantels; newels and stringers on stairs; sash; veneered screens.

Beauty of finish.

Rough, first and second grade, $\frac{5}{8}$ to 4 inches thick; 100,000 board feet of logs; 27,500 square feet of veneer, 1-20, 1-16, $\frac{1}{8}$ and 3-16 inch thick, used.

White oak, quarter-sawed (eastern oak). Middle West; South.

Of total amount of quartered white oak manufactured 8.7 per cent used in this industry.

Cabinet work; doors; mantels; newels; risers, stepping and stringers on stairs; sash.

Strong; fine finish.

Rough, first grade, 1 to 4 inches thick; 23,500 square feet of veneer, 1-16 and $\frac{1}{8}$ inch thick, used on cabinet work and doors.

Japanese oak, plain (Siberian oak).

Japan; Siberia.

Of total amount of plain Japanese oak manufactured 7.6 per cent used in this industry.

Cabinet work; stepping; veneered doors.

Strong; fine finish.

Rough, No. 1 and 2, 1 to 6 inches thick; small amount of veneer, $\frac{1}{8}$ inch thick, used on doors.

Yucca.

California.

Of total amount of Yucca manufactured 35.5 per cent used in this industry.

Fancy screens.

White; light; fibrous; flexible; easily molded to form; decorative.

Logs: turned to veneer 1-16 inch thick.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 18.0 per cent used in this industry.

Cabinet work; stairs.

Beauty of finish.

Veneer and rough lumber, first and second grades, 1-16 to 4 inches thick.

Eastern maple (white maple).

New England; Lake States; Middle West; South.

Of total amount of eastern maple manufactured 1.5 per cent used in this industry.

Cabinet work.

Rough, clear, 1 to 3 inches thick; some bird's-eye.

Red birch (white birch). New England; Lake States; Middle West. Of total amount of red birch manufactured 0.8 per cent used in this industry.

Cabinet work; screen frames; stairs; veneered doors and sash.

Rough, common to clear, 1 to 2 inches thick.

Screen frames: surfaced on two sides, clear, 1 inch thick; 7,500 square feet of rotary cut veneer, \(\frac{1}{8} \) inch thick, used.

Japanese oak, quarter-sawed (Siberian oak).

Japan; Siberia.

Of total amount of quartered Japanese oak manufactured 2.7 per cent used in this industry.

Cabinet work; newels, stepping and stringers on stairs.

Strong; fine finish.

Rough, No. 1, 1 to 2 inches thick.

By-products: post tops and small turnings.

Hickory.

South; Middle West.

Of total amount of hickory manufactured 1.3 per cent used in this industry.

Turnings.

Boards, planks, blocks, 1 to 6 inches thick.

Spanish cedar.

Mexico.

Of total amount of Spanish cedar manufactured 0.9 per cent used in this industry.

Balusters; newels and rails on stairs.

Turns well; good finish.

Rough, clear, 1 to 6 inches thick.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 0.8 per cent used in this industry.

Cabinet work.

Rough, clear and select, 1 to 4 inches thick.

Australian blue gum.

Australia.

Of total amount of Australian blue gum manufactured 32.3 per cent used in this industry.

Turnings.

Boards, planks, blocks, 1 to 6 inches thick.

Oregon maple.

Oregon.

Of total amount of Oregon maple manufactured 14.6 per cent used in this industry.

Mantels.

Good finish.

Rough, first grade, 1 to 4 inches thick.

Genisaro (Jenizaro).

Mexico.

Of total amount of Genisaro manufactured 1.1 per cent used in this industry.

Cabinet work; stairs.

Rough, clear and select, 1 to 4 inches thick.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 0.4 per cent used in this industry:

Cabinet work; carved work; mantels.

Works easily; good finish.

Cabinet work: surfaced on two sides, clear, $\frac{1}{2}$ inch thick.

Mantels: rough, first grade, 1 to 2 inches thick.

Pepperwood (California laurel).

California.

Of total amount of pepperwood manufactured 30.7 per cent used in this industry.

Cabinet work; mantels.

Strong; good finish.

Cabinet work: rough, No. 1 and 2, 1 to 6 inches thick.

Mantels: No. 1, $1\frac{1}{2}$ inches thick.

African mahogany.

Africa.

Of total amount of African mahogany manufactured 3.0 per cent used in this industry.

Screen frames.

Surfaced on two sides, clear and select, 1 inch thick.

Prima vera (white mahogany).

Mexico.

Of total amount of prima vera manufactured 2.4 per cent used in this industry.

Cabinet work; stairs.

Close grained; solid; beautiful finish.

Rough or surfaced, clear, 1 to 4 inches thick.

Philippine mahogany.

Philippine Islands.

Of total amount of Philippine mahogany manufactured 1.8 per cent used in this industry.

Veneered doors and sash.

Veneer, 1-20 and 1 inch thick.

Red gum.

Middle West; South.

Stair work.

Rough, first grade, 1 and 11 inches thick.

TABLE 28. SASH, Doors, BLINDS, AND GENERAL MILLWORK.

Kinds of wood.	Quantity annual		Average cost per 1,000 feet.	Total cost.	Grown in California. feet, board	Grown out of California. feet, board
11110 or 11300.	Feet, board measure.	Per cent.	F. o. b.	factory.	measure.	measure.
Redwood	40,374,608	30.7	\$ 19 95	\$805,473	40,374,603	
Western yellow pine	36,160,100	27.5	20 11	727,179	36,160,100	
Douglas fir	84,903,050	26.5	25 55	891,773	4,795,600	30,107,45
Sugar pine	11,930,303	9.1	27 50	328,084		42,50
Sitka spruce	8,639,500	2.8	20 74	75,483		3,639,50
Incense cedar	2,570,000	2.0	17 75	45,620		
White fir	500,000	0.4	25 00	12,500		
Red fir	402,000	0.3	10 00	4,020	402,000	
Lawson cypress	286,350	0.2	48 82	13,980		286,35
White oak (plain)	214.075	0.2	121 28	25,964		
American mahogany	175,838	0.1	163 69	28,784		175,83
White oak (quarter-sawed)	130,951	0.1	113 16	14,819		130,95
Japanese oak (plain)	79,175		97 77	7,741		79,17
Yucca	60,000		60 00	3,600		
Black walnut			140 71	2,862		20,33
Eastern maple			95 34	1,476		15,47
Red birch	12,331		127 90	1,577		12,33
Japanese oak (quarter-	,					
sawed)	9,453		120 09	1,135		9,45
Hickory			75 00	630		8,40
Spanish cedar			117 13	717		
Eastern ash			136 60	724		5,30
Australian blue gum			75 00	315		4,20
Oregon maple			50 00	150		3,00
Genisaro			160 51	441		2,74
Yellow poplar			85 00	170		2,00
Pepperwood	1,600		71 88	115	1,600	
African mahogany			165 00	165		1,000
Prima vera			154 68	138		895
Philippine mahogany			320 00	200		62
Red gum (Missouri)			84 00	6		73
Total	131,519,498	100.0	\$22 78	\$2,995,841	96,751,706	34,767,792

SHIP AND BOAT BUILDING.

Douglas fir (Oregon pine, Washington

California;

fir, Puget Sound pine).

Oregon; Washington.

Of total amount of Douglas fir manufactured 15.3 per cent used in this industry.

Decking and planking; framing for dredges, launches, sailing vessels, wooden steamers, etc.; keelsons; knees.

Decking and planking; hard, good finish; does not sliver; durable; rough, clear, 1 to 6 inches thick.

Framing, strong, comes in long lengths; rough, clear and select, up to 18 by 18 inches. Keelsons: rough, clear and select, 6 by 12 inches. Knees: butt-fir required.

By-products: boat-wedges, blocking, interior and exterior finish, moldings, window frames.

Lawson cypress (white cedar, Port Orford cedar). Oregon.

Of total amount of Lawson cypress manufactured 15.5 per cent used in this industry.

Boats; cabin finish; decks; launch hulls; launches; outside planking; scuttles; yachts, etc.

Light; strong; good finish; holds fastenings well; does not shrink or warp; durable against decay and wear.

Rough, clear and select, 1 to 4 inches thick.

By-products: moldings for interior and exterior finish, small plugs and spindles, wedges, window frames.

White oak, plain (eastern oak).

Middle West; South.

Of total amount of plain white oak manufactured 1.3 per cent used in this industry.

Cabin finish; cleats; fenders; frames; gunwales; keels, rails; stem and stern posts.

Strong; bends well; holds fastenings; durable.

Finish: rough, No. 1, 1 to 2 inches thick.

Frames, stem and stern posts: rough, No. 1, 2 to 18 inches thick.

Keels: rough, No. 1, 3 to 6 inches thick.

By-products: moldings for interior finish, plugs, wedges.

Western yellow pine (yellow pine).

California.

Cabin finish for boats and launches.

Fairly strong; does not sliver.

Rough, clear, 3 to 11 inches thick.

Australian ironbark (ironwood).

Australia.

Of total amount of ironbark manufactured 99.2 per cent used in this industry.

Bitts; fenders principally; keels; rudder-stocks; stem and stern posts. Strong; tough; wears well; durable against decay and marine-borers. Rough, or surfaced on one side, 1 to 16 inches thick.

Fenders: clear, 1 to 4 inches thick.

By-products: plugs, wedges.

Teak.

Burmah.

Of total amount of teak manufactured 95.6 per cent used in this industry.

Finish; outside companionways; rails; seats.

Beauty; durability.

Rough, clear and select, 1 to $2\frac{1}{2}$ inches thick.

Sugar pine.

California.

Of total amount of sugar pine manufactured 0.2 per cent used in this industry.

Finish; planking; ship doors and windows.

Good grain; does not shrink or warp; durable against decay.

Rough, clear and select, 1 to 3 inches thick.

Redwood.

California.

Frames for arks, barges, launches, motor-boats and rowboats; interior cabin finish on boats, launches and river steamers; planking and sheeting on launches, small boats and yachts; tanks and partitions on river steamers.

Easily worked; durable against decay.

Frames: structural sizes.

Finish: surfaced, clear, 1 to 2 inches thick.

Planking and sheeting: rough, clear, 1 to 3 inches thick.

By-products: plugs, wedges.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 6.7 per cent used in this industry.

Finish: joiner work; light decking; trimmings on boats and launches.

Lighter than oak; strong; easy to work.

Rough, clear and select, $\frac{1}{2}$ to 2 inches thick.

Locust.

Lake States; Middle West.

Of total amount of locust manufactured 100.0 per cent used in this industry.

Tree nails.

Hard; durable in water.

Logs; turned material; rough lumber, No. 1, 13 inches thick.

By-products: insulator pins.

Sitka spruce.

Oregon; Washington.

Inside flooring in boats and launches; oars; sculls; spars for boats and launches.

Flooring: rough, clear, 1 inch thick.

Oars, sculls: light, strong, tough; rough, clear, 2 to 3 inches thick.

Spars: light, straight, strong; rough, clear, 4 to 8 inches thick.

American mahogany (Mexican mahogany).

Mexico; South and Central America.

Of total amount of American mahogany manufactured 3.7 per cent used in this industry.

Interior finish; joiner work; panels; rails.

Beauty of finish.

Rough, clear, 1 to 2 inches thick.

Eastern maple. New England; Lake States; Middle West; South. Of total amount of eastern maple manufactured 3.2 per cent used in

this industry.

Decks; sheathing.

Rough, clear, 1 inch thick.

Japanese oak, plain (Siberian oak).

Japan; Siberia.

Of total amount of plain Japanese oak manufactured 2.9 per cent used in this industry.

Frames for boats and launches; foundations.

Strong.

Rough, clear and select, 1 to 10 inches thick.

Prima vera (white mahogany).

Guatemala.

Of total amount of prima vera manufactured 67.9 per cent used in this industry.

Interior work.

Rough, No. 1 and 2, 1 to 2 inches thick.

Red birch.

New England; Lake States; Middle West.

Of total amount of red birch manufactured 0.7 per cent used in this industry.

Combings; finish in boats and launches.

Rough, clear, 1 inch thick.

Spanish cedar.

Mexico.

Of total amount of Spanish cedar manufactured 1.7 per cent used in this industry.

Boats.

Rough, best, $1\frac{1}{2}$ to 2 inches thick.

Australian blue gum.

Australia.

Of total amount of Australian blue gum manufactured 61.5 per cent used in this industry.

Cleats; fenders; frames; foundations; gunwales; keels; rails; stem and stern posts.

Strong; tough; easily worked.

Rough or surfaced on one side, 1 to 16 inches thick.

Australian hickory.

Australia.

Of total amount of Australian hickory manufactured 100.0 per cent used in this industry.

Cleats; fenders; frames; foundations; gunwales; keels; rails; stem and stern posts.

Hard; tough.

Rough, clear, 1 to 16 inches thick.

Genisaro (Jenizaro).

Mexico.

Of total amount of genisaro manufactured 2.5 per cent used in this industry.

Cabin finish.

Rough, all sizes and grades.

White oak, quarter-sawed (eastern oak). Middle West; South.

Of total amount of quartered white oak manufactured 0.3 per cent used in this industry.

Fenders; gunwales; keels.

Strong; durable.

Rough, clear, 1 to 6 inches thick.

African mahogany.

Africa.

Of total amount of African mahogany manufactured 6.0 per cent used in this industry.

Cabin finish.

Rough, No. 1, 1 inch thick.

Cherry.

Middle Atlantic States.

Of total amount of cherry manufactured 6.6 per cent used in this industry.

Cabin finish.

Rough, any size and grade.

Red oak.

Middle West; South.

Of total amount of red oak manufactured 0.5 per cent used in this industry.

Cabin finish; decking.

Strong; durable.

Rough, No. 1 and 2, 2 inches thick.

Osage orange.

South; Middle West.

Of total amount of osage orange manufactured 100 per cent used in this industry.

, Pilot wheels.

Rough, No. 1, 2 to 6 inches thick.

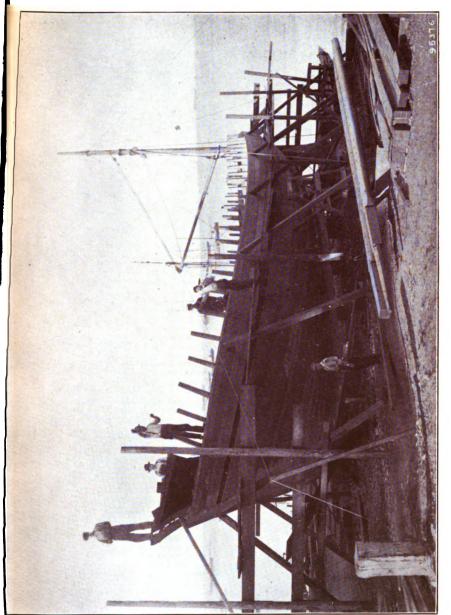




TABLE 29. SHIP AND BOAT BUILDING.

Kinds of wood	Quantity annual		Average cost per 1,000 feet.	Total cost.	Grown in California,	Grown out of California.
	Feet, board measure.	Per cent.	F. a. b.	factory.	feet, board measure.	feet, board measure.
Douglas fir	16,641,000	91.0	\$85 09	\$583,933	2,000,000	14,641,000
Lawson cypress	477,420	2.6	64 64	30,863		477,420
White oak (plain)	315,000	1.7	117 94	37,151		315,00
Western yellow pine	158,000	0.8	32 34	4,948	53,000	100,00
Australian ironbark	150,800	0.8	111 23	16,773		150,80
Teak	85,850	0.5	163 90	14,071		85,85
Sugar pine	75,000	0.4	59 60	4,470	75,000	
Redwood	67,000	0.4	33 46	2,242	67,000	
Eastern ash	47,000	0.3	107 85	5,069		47,00
Locust	45,000	0.2	40 00	1,800		45,00
Sitka spruce	44,500	0.2	38 69	1,722		44,50
American mahogany	41,700	0.2	200 75	8,371		41,70
Eastern maple	33,000	0.2	85 45	2,820		33,00
Japanese oak (plain)	30,000	0.2	122 08	3,663		30,00
Prima vera	25,000	0.1	150 00	3,750		25,00
Red birch	11,000	0.1	150 00	1,650		11,00
Spanish cedar	10,500	0.1	130 00	1,365		10,50
Australian blue gum	8,000		123 44	987		8,00
Australian hickory	6,500		105 00	683		6,50
Genisaro	6,250		150 00	937		6,25
White oak (quarter-sawed)	5,000		137 50	688		5,00
African mahogany	2,000		175 00	350		2,00
Cherry	500		150 00	75		500
Red oak	500		100 00	50		50
sage orange	50		100 00	5		5
Total	18,281,570	100.0	\$39 84	\$728,496	2,195,000	16,086,57

SIGNS.

Redwood.

California.

Of total amount of redwood manufactured 0.1 per cent used in this industry.

Braces; faces; posts; stakes.

Available in wide pieces; does not warp or check; stands outside exposure; has no pitch to work out and destroy the painted surface.

Braces: 1 by 3 inches. Faces: rough or surfaced, medium grades, 1 to 4 inches thick. Posts: 4 by 4 and 3 by 4 inches. Stakes: 1 by 3 inches. Douglas fir (Oregon pine). Oregon: Washington.

Faces; frames; stakes.

Strong; takes paint well; gives fair service. Faces: surfaced, clear, $\frac{1}{2}$ to $1\frac{1}{2}$ inches thick.

Frames: rough, medium, 1 inch thick.

Stakes: rough, common, 1 to 4 inches thick.

TABLE 30. SIGNS.

Kinds of wood,	Quantity used annually.		Average cost per 1.000 feet.	Total cost.	Grown in California.	Grown out of California.			
	Feet, board measure.	Per cent.	F. o. b.	factory.	feet, board measure.	feet, board measure.			
Redwood Douglas fir	129,000 26,000	83.2 16.8	\$31 56 22 81	\$4,071 598	129,000 5,000	21,000			
Total	155,000	100.0	\$30 09	\$4,664	134,000	21,000			

SPORTING AND ATHLETIC GOODS.

Eastern maple.

New England: Lake States: Middle West States.

Of total amount manufactured 6.2 per cent used in this industry.

Bowling alley work.

Hard; smooth.

Surfaced, clear, 1½ by 3 inches.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 0.4 per cent used in this industry.

Billiard and pool tables.

Surfaced, plain, 1 to 1½ inches thick.

White oak, plain (eastern oak).

Billiard and pool tables.

Strong; fine finish.

Rough, clear, 1 to 2 inches thick.

Black walnut.

South; Middle West.

Middle West: South.

Rails on card, billiard and pool tables.

Hard; beautiful finish.

Rough, clear, 1 inch thick. Note.—Very small quantity used.

Lignum vitæ.

South America.

Bowling balls.

Hard.

Redwood.

Round timbers, 7 inches in diameter.

Note.—Very small quantities used.

TABLE 31. Sporting and Athletic Goods.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 fe	r	Total cost.	Grown in California, feet, board	Grown out of California. feet, board
	Feet, board measure.	Per cent.			measure.	measure.	
Eastern maple	62,800	95.4	\$ 78	64	\$4,939		62,800
Yellow poplar	2,000	8.0	38	00	76		2,000
White oak (plain)	1,000	1.6	45	00	45		1,000
Total	65,800	100.0	\$ 76	89	\$5,060		65,800

TANKS.

California.

Of total amount of redwood manufactured 11.8 per cent used in this industry.

Beer, water, and wine vats and tanks, mud sills for tank frames, water troughs: wooden stave pipe.

Ease of working; durability against decay; resistance to fire, ability to withstand a hot sun without shrinking or warping.

Tanks: rough, clear and select, 6 to 10 inches thick.

Staves: 2 or 3 by 6 inches. Bottoms: 2 or 3 by 12 inches.

Mud sills: rough, common, 2 inches thick. Pipe: rough, clear, 1 to 6 inches thick.

By-products: balusters, brackets, spindles, in which all material 1\frac{3}{6} by 1\frac{3}{6} by 8 to 10 inches long may be utilized; sawdust for packing ice; shavings for stable bedding.

Douglas fir (Oregon pine, red fir).

Oregon; Washington.

Of total amount of Douglas fir manufactured 2.1 per cent used in this industry.

Tank bodies and foundations; door pieces and frames; water (hot and cold), wine, and chemical tanks; wooden stave pipe.

Strong; good container; durable against decay.

Bodies: rough, clear and select, 1 to 6 inches thick.

Foundations: rough, medium grades, 6 by 6 inches. Door-pieces: rough, clear, 4 by 6 and 4 by 12 inches.

Frames: rough, common to clear, 1 to 10 inches thick.

Pipe: rough, clear, 2, 3, 4 and 6 inches thick.

Oregon oak.

Oregon.

Of total amount of Oregon oak manufactured 99.8 per cent used in this industry.

Tanks and pipe.

Strong; durable.

Rough, clear and common, 2, 3, 4, and 6 inches thick.

White oak, plain (eastern oak).

Middle West; South.

Of total amount of plain white oak manufactured 0.3 per cent used in this industry.

Pipe; tanks; vats.

Bends well; durable.

Rough, common to clear, $1\frac{1}{2}$ to 6 inches thick.

Western yellow pine (white pine, yellow pine).

California.

Small tanks.

Soft; works easily; sap does not stain.

Rough or surfaced on two sides, clear, 1 to 2 inches thick.

White oak, quarter-sawed (eastern oak).

Middle West; South.

Of total amount of quartered white oak manufactured 0.8 per cent used in this industry.

Tanks.

Bends well; durable.

Rough, clear, 1 to 2 inches thick.



Sugar pine.

California.

Hot grease vats: small tanks: troughs: water boxes.

Soft: nails well: resists decay.

Rough or surfaced on two sides, clear and select, 1 to 3 inches thick. Oregon: Washington. Sitka spruce.

Tanks.

Tasteless: durable.

Rough, clear, 1 to 11 inches thick.

Eastern maple (hard maple).

New England: Lake States: Middle West; South.

Of total amount of eastern maple manufactured 0.2 per cent used in this industry.

Acid tanks and vats.

Hard.

Rough, clear and select, 11 to 2 inches thick.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Tanks and vats.

Bends well: durable.

Rough, clear, and select, 1 to 2 inches thick.

TABLE 32. TANKS.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 feet.	Total cost.	Grown in California.	Grown out of California feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	feet, board measure.	measure.
Redwood	12,851,938	74.7	\$34 70	\$445,958	12,851,938	
Douglas fir	2,234,322	13.0	45 49	101,689		2,234,32
Oregon oak	2,000,000	11.6	48 00	96,000		2,000,00
White oak (plain)	75,000	0.4	110 00	8,250		75,000
Western yellow pine	15,000	0.1	32 00	480	15,000	
White oak (quarter-sawed)	11,401		120 00	1,368		11,40
Sugar pine	10,750		74 19	798	10,750	
Sitka spruce	7,500		47 00	358		7,500
Eastern maple	2,000		110 00	220		2,000
Lawson cypress	1,400		60 00	84		1,40
Total	17,209,311	100.0	\$38 06	\$655,150	12,877,688	4,331,62

TRUNKS AND VALISES.

Sitka spruce.

Oregon; Washington.

Of total amount of spruce manufactured 1.9 per cent used in this industry.

Trunk boxes and trays.

Light, soft, tough, easily worked; nails without splitting.

Shooks; rough or surfaced lumber.

Boxes: medium grades, \(\frac{3}{2}\) to \(\frac{3}{2}\) inch thick.

Box ends: \(\frac{1}{2} \) inch thick.

Trays: 1 inch thick.

By-products: doll trunks, small tool cases.

Western yellow pine (white pine).

California.

Of total amount of yellow pine manufactured 0.1 per cent used in this industry.

Trunk boxes and trays.

Light, fairly strong, easily worked.

Rough, clear, 1 to $1\frac{1}{2}$ inches thick; or surfaced, clear, $\frac{1}{4}$ to $\frac{3}{4}$ inch thick.

By-products: sample cases.

Black cottonwood.

Oregon; Washington.

Of total amount of black cottonwood manufactured 5.1 per cent used in this industry.

Trunk bodies.

Light; tough; does not warp.

Rough mill run, 1 inch thick: 500 square feet of 3-ply veneer, $\frac{3}{8}$ to $\frac{5}{8}$ inch thick, used.

Eastern cottonwood.

Middle West.

Of total amount of eastern cottonwood manufactured 88.8 per cent used in this industry.

Trunk bottoms, sides and trays.

Fibrous; light; strong; tough; flexible.

Surfaced veneer, 3 to 5 ply, 1-16, \(\frac{1}{8}\), \(\frac{1}{8}\), \(\frac{1}{8}\) and \(\frac{5}{8}\) inch thick.

Elm.

Michigan; Middle West.

Of total amount of elm manufactured 20.9 per cent used in this industry.

Trunk slats.

Strong; tough; easily worked.

Surfaced, clear, 1, 3 and 5 inch thick.

By-products: small sample cases.

Sugar pine.

California.

Sample cases; trunks.

Light weight.

Surfaced, select, 4 to 3 inch thick.

Red gum.

Middle West; South.

Of total amount of red gum manufactured 2.1 per cent used in this industry.

Sample cases; trunks.

Clear; smooth; strong; tough; does not warp.

Veneer, 3 ply, 3-16 to § inch thick.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 1.1 per cent used in this industry.

Trunk sides.

Light; tough.

Surfaced, clear, 1 to 3 inch thick.

Basswood.

Middle West.

Of total amount of basswood manufactured 7.8 per cent used in this industry.

Trunk boxes.

Light; tough.

Rough veneer, 3 ply, 1-16 and 3 inch thick.

Chestnut.

Atlantic States.

Of total amount of chestnut manufactured 100.0 per cent used in this industry.

Trunk slats.

Large grain; strong.

Surfaced, clear, 1 by 2 inches.

By-products: small sample cases.

TABLE 33. TRUNKS AND VALISES.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 fe	r '	Total cost.	Grown in California, feet, board	Grown out of California. feet, board
	Feet, board measure.	Per cent.	F. o. b. factory.			measure.	measure.
Sitka spruce	1,296,850	64.8	\$23	94	\$81,047		1,296,85
Western yellow pine	858,000	17.5	21	38	7,548	858,000	
Black cottonwood	255,500	12.7	18	68	4,778		255,50
Eastern cottonwood	43,725	2.1	98	20	4,294		43,72
Elm	83,460	1.7	106	95	8,578		33,46
Sugar pine	11,000	0.5	112	00	1,232	11,000	
Red gum (Missouri)	9,915	0.5	85	47	847		9,91
Eastern ash	7,985	0.4	185	00	1.071		7,93
Basswood	5,500	0.8	38	18	210		5,50
Ohestnut	1,000	0.0	45	00	45		1,00
Total	2,017,885	100.0	\$27	08	\$54,645	864,000	. 1,653,88

VEHICLE AND VEHICLE PARTS.

Hickory.

South; Middle West.

Of total amount of hickory manufactured 91.8 per cent used in this industry.

Axle-beds; axles; bent stock; blocks; bolsters; felloes; frames; gears; poles; reaches; rims; runs; shafts; sills; singletrees; spokes; springbars; tongues; truck-stakes.

Elastic; light; strong; tough; bends well; durable.

Rough, clear, 1 to 4 inches thick, old and second growth.

By-products: brake and spring blocks, hook and tool handles.

White oak, plain (eastern oak).

Middle West; South.

Of total amount of white oak manufactured 2.3 per cent used in this industry.

Auto tops; auto-top bars; beds; bolsters; brake-blocks; coupling poles; doubletrees; felloes; flooring; frames; footboards; gears; hounds; panels; reaches; ribs; sills; spokes; standards; stocks; tongues; wagon bodies; whiffletrees.

Strong; tough; durable against wear and decay.

Rough, clear, ½ to 4 inches thick.

Auto-top bars: 8 feet 4 inches by 1 inch by $1\frac{1}{2}$ inches.

By-products: brake and spring blocks; bung starters; hook and tool handles: mallets.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 81.2 per cent used in this industry.

Auto body panels; bodies; boxes; buggy, surrey and wagon body sides, buggy and wagon beds; moldings; panels; seats.

Close grained; light; smooth; soft; easy to work; pliable; finishes and paints well; does not check or warp.

Rough or surfaced, clear, \(\frac{3}{5}\) to \(\frac{7}{5}\) inch thick.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 64.9 per cent used in this industry.

Auto tops; axle beds; body frames on autos; bodies; buggy sills; cross pieces; flooring; footboards; framing; gears; panels; poles; rails; reaches; ribs; seats; shafts; sills; spring bars; truck poles; tongues; wheels.

Strong for its weight, tough, elastic; works easily; bends well; retains its shape; does not split or warp.

Rough No. 1 and 2, 1 to 3 inches thick; old and second growth used.

Douglas fir.

Oregon: Washington.

Of total amount of Douglas fir manufactured 0.3 per cent used in this industry.

Bars, beams and stringers on wagons; beds and floors of wagons; bottoms of delivery and express wagons; cross bars; doubletrees; footboards; frames; fruit trucks; hay wagon bodies.

Light; strong; tough; cheap; durable; wears well.

Bottoms and floors of heavy wagons: rough, clear, 1 inch thick.

Bottoms and floors, delivery and express wagons: $\frac{1}{2}$ to 2 inches thick.

Cross-bars, doubletrees: former 2 by 4, latter 3 by 6 inches.

Footboards: 3 and 1 inch thick.

Frames, beds, bodies: rough, clear and select, 1 to 8 inches thick.

Norm.—Some California Douglas fir is used locally; and is considered stronger and tougher than that from Oregon and Washington.

Red birch (black birch, white birch).

New England; Lake States; Middle West.

Of total amount of red birch manufactured 18.5 per cent used in this industry.

Felloes; filler boards on automobile dashes; hubs; poles.

Strong; tough; bends well.

Logs, 12 to 14 inches in diameter; or rough lumber, first and second grades, 1 to 6 inches thick.

Filler boards: finishes to imitate mahogany; surfaced, first and second grades, 13-16 inch thick.

By-products: brake and spring blocks, hook and tool handles.

Sitka spruce.

Oregon; Washington.

Of total amount of spruce manufactured 0.3 per cent used in this industry.

Bodies; bottoms; cheap; panels; linings; roofs; seats ; sides.

Cheap; durable.

Rough, clear, $\frac{1}{2}$ to $1\frac{1}{2}$ inches thick. Side linings and panels: veneer, 1-10, 1-12, 1-16 thick.

Western yellow pine (white pine, yellow pine). California.

Cart and wagon bodies; flooring and seats on buggies, carts, surreys and wagons; panels.

Light; strong.

Surfaced on two sides, clear and select, 1 to 4 inches thick.

Red oak.

Middle West; South.

Of total amount of red oak manufactured 80.2 per cent used in this industry.

Carriage work.

Rough, No. 1 and 2, 1 to 4 inches thick.

By-products: strap handles.

Eastern maple (hard maple, rock maple). New England; Lake States; Middle West; South.

Of total amount of eastern maple manufactured 7.2 per cent used in this industry.

Axle beds; felloes; wagon blocks and floors.

Hard; tough; does not check.

Rough, first grade, 1 to 6 inches thick.

California blue gum.

California.

Of total amount of California blue gum manufactured 25.2 per cent used in this industry.

Axle beds; bolsters; poles; reaches; shafts; tongues; bars.

Available; strong.

Rough, clear, 1 to 4 inches thick.

Note.—One manufacturer reports having made felloes for a set of wagon wheels out of this material, which gave good service the first summer; but which rotted to pieces in contact with the ground when stored under a shed for the winter. Another manufacturer reports its use to be satisfactory while moisture is retained, becoming very brittle when thoroughly dry. The latter uses it because he can get it shaped to desired forms, thus eliminating waste from his own operations.

White oak, quarter-sawed (eastern oak). Middle West; South.

Of total amount of quartered white oak manufactured 0.8 per cent used in this industry.

Wagons.

Strong; durable.

Rough, clear, 1 to 4 inches thick.

Redwood.

California.

Bodies for automobiles and sight-seeing auto cars; linings and roofs for wagons and automobiles.

Bodies: rough, clear, 1 to 6 inches thick.

Linings, roofs: 3 inch thick and upward.

Japanese oak, plain (Siberian oak).

Japan; Siberia.

Of total amount of plain Japanese oak manufactured 0.5 per cent used in this industry.

Bolsters; cheap work; fillers on automobile dashboards.

Strength; finish.

Rough, common to select, 1 to 3 inches thick.

American mahogany.

South America.

Of total amount of American mahogany manufactured 0.2 per cent used in this industry.

Fillers on automobile dashboards; finish; sash on automobiles.

Beauty of grain.

Rough or surfaced, first and second grades, \(\frac{3}{8} \) to 4 inches thick.

Black walnut.

South; Middle West.

Of total amount of black walnut manufactured 1.8 per cent used in this industry.

Fillers on automobile dashboards.

Surfaced, No. 1 and 2, 13-16 inch thick.

Australian ironbark.

Australia.

Of total amount of Australian ironbark manufactured 0.8 per cent used in this industry.

Poles, reaches.

Hard; strong; tough.

Surfaced, common, 1 inch thick.

Basswood.

Middle West.

Of total amount of basswood manufactured 1.5 per cent used in this industry.

Panels.

Rough, No. 1 and 2, $\frac{3}{8}$ and $\frac{1}{2}$ inch thick.

Sugar pine.

California.

Wagon repairs.

Surfaced, clear, 1 and 1½ inches thick.

Philippine mahogany (Narra).

Philippine Islands.

Of total amount of Philippine mahogany manufactured 3.0 per cent used in this industry.

Filler boards on automobile dashes.

Surfaced No. 1 and 2, 13-16 inch thick.

Australian blue gum.

Australia.

Of the total amount of Australian blue gum manufactured 6.2 per cent used in this industry.

Beams and stringers.

Strong; tough.

Rough, No. 1, 1 to 12 inches thick.

By-products: brake and spring blocks, hook and tool handles.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Wagon repairs.

Surfaced, clear, 11 inches thick.

Spanish cedar.

Mexico.

Side linings.

Rough, clear, § to 6 inches thick.

TABLE 34. VEHICLE AND VEHICLE PARTS.

Kinds of wood	Quantity used annually.		Average cost per 1,000 feet.		Grown in California,	Grown out of California.	
	Feet, board measure.	Per cent.	F. o. b. factory.		feet, board measure.	feet, board measure.	
Hickory	567,771	18.1	\$109	50	\$62,171		567,77
White oak (plain)	553,062	17.6	114	59	63,375		553,06
Yellow poplar	458,899	14.6	100	46	46,101		458,89
Eastern ash	455,663	14.5	89	81	40,695		455,66
Douglas fir	285,610	9.1	40	19	11,479		285,61
Red birch	276,550	8.8	60	86	16,832		276,55
Sitka spruce	216,646	6.9	47	43	10,276		216,64
Western yellow pine	121,800	3.9	83	12	4,084	121,800	
Red oak	75,000	2.4	50	00	3,750		75,00
Eastern maple	73,350	2.3	65	56	4,808		73,85
California blue gum	13,950	0.4	109	96	1,584	13,950	
White oak (quarter-sawed)	12,500	0.4	110	00	1,875		12,50
Redwood	6,000	0.2	43	88	260	6,000	
Japanese oak (plain)	5,800	0.2	87	07	505		5,80
American mahogany	2,814		208	44	587		2,81
Black walnut	2,000		160	00	329		2,00
Australian ironbark	1,200		80	00	96		1,20
Basswood	1,080		80	00	86		1,06
Sugar pine	1,000		60	00	60	1,000	
Philippine mahogany	1,000		160	00	160		1,00
Australian blue gum	800		91	56	73		80
Lawson cypress	500		60	00	30		50
Spanish cedar	500		120	00	60		50
Total	8,138,495	100.0	\$85	74	\$268,667	142,750	2,990,74

WOOD CARVINGS.

Redwood.

California.

Carvings.

Soft; easily carved.

Rough, vertical grain, clear, all thicknesses.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 1.1 per cent used in this industry.

Carved frames and chandeliers.

Soft; adapted to gilding.

Rough, No. 1, 1 to 4 inches thick.

Sugar pine.

California.

Carvings.

Soft; carves well.

Surfaced on two sides, clear, 7 to 11 inches thick.

Western yellow pine.

California.

Carvings.

Soft; carves well.

Surfaced on two sides, common, 7 inch thick.

TABLE 35. WOOD CARVINGS.

Kinds of wood,	Quantity used annually.		Average cost per 1,000 feet.		Grown in California. feet, board	Grown out of California.	
	Feet, board measure.	Per. cent.	F.	o. b.	factory.	measure.	feet, board measure.
Redwood	10,500	48.8	\$44		\$465	10,500	
Yellow poplar Sugar pine	6,000 8,000	28.0 13.9	100 46	67	600 140	8,000	6,00
Western yellow pine	2,000	9.8	40	00	80	2,000	
Total	21,500	100.0	\$59	77	\$1,285	15,500	6,00

Black cottonwood.

Oregon; Washington.

Of total amount of black cottonwood manufactured 49.9 per cent used in this industry.

Candy and coffee drums, candy pail covers; pail stock; veneered barrels.

Light; fibrous; odorless; pliable; does not split in nailing.

Stave bolts: rough lumber, or surfaced on one side, clear, 7-16 to $\frac{3}{4}$ inch thick: rotary cut veneer, $\frac{1}{8}$, 3-16 and $\frac{3}{4}$ inch thick.

Sitka spruce.

Oregon; Washington.

Of total amount of Sitka spruce manufactured 3.3 per cent used in this industry.

Butter tubs; curtain poles; pail stock; step ladders.

Butter tubs; pail stock: soft, light, strong, odorless, tasteless, especially good container for butter, olives, etc.

Stave bolts: rough or planed and jointed lumber, clear, select, $\frac{3}{2}$ to $1\frac{1}{2}$ inches thick.

Ladders: light, strong, tough, nails well, not likely to split, stands rain and sun without checking: rough, clear and select, 1 to $1\frac{1}{2}$ inches thick.

By-products: crates, dowels, fruit boxes, handles, roof cleats and jacks, washboard frames; broken heads and staves worked up into small keg heads; sawdust for butcher shop floors and litter in chicken houses; shavings for stable bedding.

Douglas fir (Oregon pine).

Oregon; Washington.

Of total amount of Douglas fir manufactured 0.5 per cent used in this industry.

Awning boards; coat hangers; flag poles; frames, finish and flooring on portable buildings; house and orchard ladders; tent frames, flooring, poles and stakes.

Fairly light; hard; stiff; straight grained; strong; tough; cheap; wears well.

Awning boards: surfaced on one or four sides, select, 1 and 11 inches thick.

Coat hangers: surfaced, common to clear, 1 inch thick.

Flag poles, tent masts: rough, clear and select, 6 to 10 inches thick.

Flooring: surfaced on one side, common to clear, 1 inch thick.

Ladder poles, back legs: rough or surfaced, clear and select, 2 by 2 inches.

Ladder steps: rough or surfaced, select, 1 by 3 inches.

Ladder braces: rough, clear and select, 1 and 11 inches thick.

Ladder tongues: 2 by 2 inches.

Ladder tops: clear and select, 1 inch thick.

Tent and awning poles: surfaced on one side, half round, or surfaced on four sides, clear, 2 by 2 to 4 by 4 inches.

By-products: rockers, sewing tables, tent stakes.

Sugar pine.

California.

Of total amount of sugar pine manufactured 1.2 per cent used in this industry.

Carved letters; drain boards chiefly; tent stakes; wash tray frames.

Light, soft; easily worked; stands alternate wetting and drying well. Carved letters: surfaced on two sides, common $\frac{\pi}{4}$ inch thick.

Drain boards, wash tray frames: rough, all grades, 1 to $1\frac{1}{2}$ inches thick.

Tent stakes, stand battering without splitting: surfaced, select, 1 to 1; inches thick; made from waste of box factories.

By-products: beehive supplies; dresser brackets; small turnings; sawdust and shavings used for horse bedding and chicken house litter.

Redwood. California.

Of total amount of redwood manufactured 0.3 per cent used in this industry.

Bowls, dishes; frames and standards for window display novelties; jeweler's trays; novelties; plaques; roof boards on ordinary and roller awnings; trays.

Bowls, dishes, plaques, trays: wood burns readily under the electric needle and becomes intensely black: bolts, or rough or surfaced lumber, all grades up to 2 inches thick.

Frames, standards for novelty displays: light, cheap, easily worked: surfaced, clear, $\frac{1}{2}$ inch thick.

Jewelers' trays, surfaced, common, $\frac{1}{4}$ and $\frac{3}{8}$ inch thick: after manufacture covered with paper, leatherette, or velvet.

Novelties: plain, fancy, and burl redwood; boards, planks, blocks: fancy and burl redwood show exquisite markings when polished.

Roof boards: does not warp or twist, durable against weather; surfaced on four sides, clear and select, 1 inch thick.

By-products: balusters, brackets, ceiling cores, corner blocks, cresting, stakes.

Western yellow pine (white pine).

California.

Awnings; drain boards chiefly; tent poles.

Awnings, tent poles: straight grained, fairly strong: surfaced on four sides, select, 2 inches thick.

Drain boards: light, soft, easily worked, does not warp: rough, clear, 1 to 2 inches thick.

Eastern ash (white ash).

Middle West; South.

Of total amount of eastern ash manufactured 14.2 per cent used in this industry.

Extension ladders; steam table; carving boards.

Light; tough.

Ladders: turned, best, 11 inches thick.

Carving boards: surfaced, clear.

Yucca.

California.

Of total amount of yucca manufactured 40.9 per cent used in this industry.

Decorative articles; tree protectors; waste baskets.

Light; fibrous; white; flexible; easily molded to decorative form.

Logs: turned to veneer 1-16 inch thick.

Lawson cypress (white cedar, Port Orford cedar).

Oregon.

Of total amount of Lawson cypress manufactured 1.8 per cent used in this industry.

Blinds and rolling partitions; bowls; drain boards; souvenir novelties; trays.

Drain boards: durable against decay; does not split, warp or stain. Blinds and partitions: lightness coupled with strength, beauty of finish.

Novelties, trays: best wood for pyrography or needle burning.

Rough, clear and select, 1 to 2 inches thick.

White fir.

California.

Of total amount of white fir manufactured 0.2 per cent used in this industry.

Raisin trays.

Logs, all grades and sizes.

Incense cedar.

California.

Of total amount of incense cedar manufactured 1.0 per cent used in this industry.

Raisin trays.

Logs, all grades and sizes.

White oak, plain (eastern oak).

Middle West; South.

Bowls; coat hangers; jewelry trays; ladder rings; store ladders; trays.

Strong; good finish.

Bowls, ladders, trays: clear and select, 1 to 2 inches thick.

Coat hangers: surfaced, clear, 1 inch thick. Jewelry trays: surfaced, clear, 1 inch thick.

Oregon ash.

Oregon.

Of total amount of Oregon ash manufactured 85.6 per cent used in this industry.

Extension ladders.

Strong; tough.

Turned best, 11 inches in diameter by 16 inches long.

Orange.

California.

Of total amount of orange manufactured 100 per cent used in this industry.

Bowls; souvenir novelties; trays.

Takes good polish.

Logs; trunks, branches: also rough lumber, clear, 1 to 2 inches thick.

Yellow poplar (whitewood).

Middle West; South.

Of total amount of yellow poplar manufactured 0.7 per cent used in this industry.

Jewelers' boxes and trays.

Light; good color and finish.

Surfaced, first quality, † to † inch thick.

Eastern maple. New England; Lake States; Middle West; South. Of total amount of eastern maple manufactured 0.5 per cent used in this industry.

Extension ladders; ladder rungs; tracks for store ladders.

Strong; wears well.

Rough, No. 1 and 2, 3 to 2 inches thick.

By-products: roof jacks.

Hickory.

South: Middle West.

Of total amount of hickory manufactured 0.4 per cent used in this industry.

Extension ladders.

Light; tough.

Funed, best, 11 inches in diameter.

Pepperwood (California laurel).

California.

Of total amount of pepperwood manufactured 38.5 per cent used in this industry.

Novelties.

Good polish; fine finish.

Logs; good quality.

Manzanita.

California.

Of total amount of manzanita manufactured 100.0 per cent used in this industry.

Novelties; souvenirs.

Hard; polishes well.

Roots, trunks, branches, good quality.

Red birch (white birch). New England, Lake States; Middle West. Of total amount of red birch manufactured 0.1 per cent used in this industry.

Extension ladders; rungs; tracks for store ladders.

Strong; tough.

Extension ladders: turned, best, 1 inch diameter by 17 inches long. Rungs, tracks: rough, select, 1½ inches thick.

Mountain mahogany, and mountain lilac.

California.

Of total amount of mountain mahogany and mountain lilac manufactured 100 per cent used in this industry.

Novelties.

Hard; fine polish.

Bundles, good quality, all sizes.

American mahogany.

South and Central America.

Jewelry trays.

Fine finish.

Surfaced, first grade, 4 by 14 by 10 to 12 inches.

Black walnut.

Middle West; South.

Of total amount of black walnut manufactured 0.2 per cent used in this industry.

Same as American mahogany.

Lignum vitæ.

Flag pole tops.

Hard.

Round timbers, 7 inches in diameter.

Olive.

Souvenirs.

Hard; polishes well.

Trunks and branches.

TABLE 36. WOODENWARE AND NOVELTIES.

Kinds of wood	Quantity used annually.		Average cost per 1,000 feet.		Grown in California, feet, board	Grown out of California. feet, board measure.	
	Feet, board Per measure. cent.		F. o. b. factory.				measure.
Black cottonwood	2,499,300	38.2	\$16	50	\$41,288	649,300	1,850,000
Sitka spruce	2,227,614	84.1		11	71,529		2,227,614
Douglas fir	598,775			39	18,795	3,500	595,275
Sugar pine	418,568	6.4		06	80,999	418,563	
Redwood	296,500			00			
Western yellow pine				26	5,906		
Eastern ash	100,000			00	8,500		100,000
Yucca	69,000	1.1			4,820	69,000	
Lawson cypress		0.8		44			54.250
White fir	81,250		16	50		81.250	
Incense cedar				50	516		
White oak (plain)	13,343	0.2	84	80	1.125		13,343
Oregon ash	12,500	0.2	40	00	500		12,500
Orange	•			00	761	8,450	
Yellow poplar				00	300		
Eastern maple	5,000			00			5,000
Hickory	2,730		110	00	300		2,730
Pepperwood	2,000		80	00	160	2,000	
Manzanita	2,000		27	50	55	2,000	
Red birch	1,930		80	00	154		1,930
Mountain mahogany	1,000			00	15	1.000	
Mountain lilac	1,000			00	15	1,000	
American mahogany	700		800		210		700
Black walnut	235			36	21		235
Total	6,540,890	100.0	\$30	02	\$196,333	1,672,313	4,868,577

MISCELLANEOUS.

White fir.

California.

Of total amount of white fir manufactured 60.1 per cent used for paper pulp and other miscellaneous uses.

Sitka spruce.

Oregon; Washington.

Of the total amount of Sitka spruce manufactured 10.5 per cent used for shade and map rollers, etc.

Red fir.

California.

Of the total amount of red fir manufactured 59.8 per cent used for paper pulp, etc.

Douglas fir (Oregon pine).

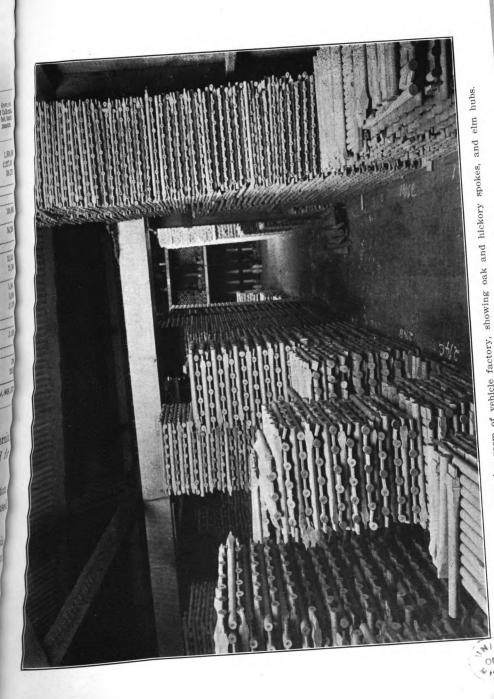
Oregon; Washington.

Of the total amount of Douglas fir manufactured 0.4 per cent used for gates and fencing, pulleys and conveyors, etc.

Lawson cypress (Port Orford cedar).

Oregon.

Of the total amount of Lawson cypress manufactured 6.7 per cent used for matches, etc.



Redwood.

California.

Of the total amount of redwood manufactured 0.1 per cent used for gates and fencing, etc.

Western yellow pine (white pine).

California.

Of total amount of western yellow pine manufactured less than 0.1 per cent used for dowels, etc.

White oak, quarter-sawed (eastern oak).

Middle West; South.

Of the total amount of quartered white oak manufactured 3.8 per cent used for miscellaneous purposes.

Sugar pine.

California.

Of the total amount of sugar pine manufactured 0.1 per cent used for saddles and harness, shade and map rollers, etc.

California blue gum.

California.

Of the total amount of California blue gum manufactured 66.9 per cent used for miscellaneous hardwood purposes.

Eastern maple. New England; Lake States; Middle West; South.

Of the total amount of eastern maple manufactured 2.0 per cent used for miscellaneous purposes.

Sycamore.

California.

Of the total amount of sycamore manufactured 100.0 per cent used as 3 and 5 ply cores for panels, $\frac{1}{8}$ inch thick.

White oak, plain (eastern oak).

Middle West; South.

Of the total amount of plain white oak manufactured less than 0.1 per cent used for pulleys and conveyors, etc.

Hickory.

Middle West; South.

Of the total amount of hickory manufactured 0.2 per cent used for handles, etc.

American mahogany.

Central and South America.

Of the total amount of American mahogany manufactured less than 0.1 per cent used for miscellaneous purposes.

Philippine mahogany (Narra).

Philippine Islands.

Of the total amount of Philippine mahogany manufactured 2.0 per cent used for miscellaneous purposes.

Basswood.

Middle West.

Of the total amount of basswood manufactured 0.4 per cent used for miscellaneous purposes.

Broom corn.

California; Oklahoma.

Brooms.

Boxwood sawdust.

Chemically prepared bathroom floors, drain boards, etc.

Rattan.

India, via New York.

Miscellaneous uses.

Ebony.

Miscellaneous uses.

TABLE 37. MISCELLANEOUS.

Kinds of wood,	Quantity annual		Average cost per 1,000 feet.	Total cost.	Grown in California, feet, board	Grown out of California. feet, board
	Feet, board measure.	Per cent.	F. o. b.	factory.	measure.	measure.
White fir	8,250,000		\$8 00	\$66,000	8,250,000	
Sitka spruce	7,083,000	,	13 17	92,620		7,033,000
Red fir	2,750,000		8 00	22,000	2,750,000	
Douglas fir	469,000	I	15 18 :	7,117		469,000
Lawson cypress	207,500		34 00			207,500
Redwood	188,000		21 27	2,829	133,000	
Western yellow pine	90,000		14 00	1,260	90,000	
White oak (quarter-sawed)	57,500		105 00	6,087		57,500
· Sugar pine	40,000		53 75	2,150	40,000	
California blue gum	37,000		80 00	2,960	37,000	
Eastern maple	20,000		155 00	8,100		20,000
Sycamore	17,000		12 47	212	17,000	
White oak (plain)	8,000		96 67	290		3,000
Hickory	1,000		200 00	200		1,000
American mahogany	1,000	!	90 00	90		1,000
Philippine mahogany	677		50 00	34		677
Basswood	250		120 00	30		250
Broom corn	113	tons.	104 78	11,840	83	30
Boxwood sawdust	131,250	lbs.	6 57	863		131,250
Rattan	10,000	lbs.	80 00	800		10,000
Ebony	500	lbs.	50e per lb.	250		500
Total				\$227,787		

DIRECTORY OF MANUFACTURERS BY INDUSTRY.

Agricultural Implements. Anderson Barngrover Manufacturing Company......San Jose Best Manufacturing Company, The.......San Leandro

Best Manufacturing Company, The	
Briggs, J. Smith	
Chilson Automatic Plow and Traction Manufacturing Company	
Davenport, L. M., Company	Los Angeles
Fresno Agricultural Works	Fresno
Hardwood Planing Mill Company	San Jose
Holt Manufacturing Company	Stockton
Houser-Haines Manufacturing Company	Stockton
Junior Monarch Hay Press Company	San Leandro
Killifer Manufacturing Company	Los Angeles
Knapp, H. G. & Son	San Jose
Los Angeles Brush Manufacturing Company	Los Angeles
Moore, A. D	
Prahsen, W. B.	
Rose, T. T., & Co	
Schmeiser Manufacturing Company	
Shaw, H. C., Company, The	
Stearns & Harray	
Stillman, R. P.	
Stockton Tool Works	Stockton
Vallejo Carriage Works	
Wilson, Richard F.	
·	Stockton
Artificial Limbs. Chicago Artificial Limb Company	O
Dickson & Bull Company	
Milligan, Geo. R. E., Company	
Pacific Surgical Manufacturing Company	
Yucca Manufacturing Company	
Yucca Wood and Leather Company	Los Angeles
Boxes and Crates—Packing.	
Algoma Lumber Company	
Beach, G. G., & Co.	
Brookings Lumber and Box Company	
California Pine Box and Lumber Company	
California White Pine Lumber Company	
Chase, S. H., Lumber Company	
Chanslor & Lyon Motor Supply Company	
Coast Manufacturing and Supply Company	
Eagle Box and Manufacturing Company	
Enterprise Paper Box Company	
Farnsworth Electric Works	
Fleishhacker, A., & Co.	
Frasier Bros.	
Fresno Flume and Lumber Company	
Gladding, McBean & Co.	
Grants Pass Box Company	
Kenyon, S. Y., Basket Company	San Francisco
Lamoine Lumber and Trading Company	
Lawrence, H. F.	Wright;
Los Angeles Basket Company	Los Angeles:
Los Angeles Box and Lumber Company	
Los Angeles Casket Company	Los Angeles
Madary Planing Mills	
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Mahoney, M. F	
Meese & Gottfried Company	
Mercantile Box Company	
Oakland Box Factory, Inc.	
Pacific Basket and Barrel Company	
Pacific Box Factory	
Pacific Coast Basket Factory	
Pacific Shingle and Box Company	
Petaluma Box Company	
Peterson, H. A.	
Russ Lumber and Mill Company	
Sierra Nevada Wood and Lumber Company	
Sinkinson, J. H., & Sons	
Smith, C. A., Lumber Company	-
Southern California Box Company	
Standard Box Company	
Standard Lumber Company	
Taylor, A. A., & Son	
Terry Lumber Company	
Thatcher Lumber Company	
Thiebaut Bros.	
Truckee River Box Company	Truckee
Weed Lumber Company	
Weston Basket and Barrel Company	
White & De Hart Company	
Wilson & Willard Manufacturing Company	
Wilson, Richard F	Stockton
Boxes—Tobacco.	•
Korbel Box Factory	San Francisco
Machris Bros.	
Pacific Cigar Box Factory	Oakland
Brooms.	
Eagle Broom Works	Los Angeles
Excelsior Broom Factory	
Hemingway Bros.	
Simpson Brush Company	
Washington Broom Factory	San Francisco
Brushes.	
Los Angeles Brush Manufacturing Company	Los Angeles
Schwarz, F. R.	
Simpson Brush Company	San Francisco
Bungs and Faucets.	
D. & B. Pump and Supply Company	Los Angeles
Ray, W. S., Manufacturing Company	
Waas, Henry, Company	
Car Construction.	
Bradford, F. G., Mill Company	San Francisco
Hammond Elevator Company	
Holman, W. L., Company	
Pacific Electric Railway Company	
• • •	
Caskets and Coffins. Pacific Burial Case Company	Los Angeles
Pacific Manufacturing Company	
San Francisco Casket Company	
Southern California Box Company	
Western Casket Company	
- '	Oanauu
California Souvenir Company	Los Angeles
Eames Tricycle Company	San Francisco
	San Francisco

McKurty, N., Rattan Company San Francisco

Cooperage. Brown & Nugent	San Francisco
Bucking, D., & Son	
California Barrel Company	
Humboldt Cooperage Company	
Levitt, S	
Petzold, August, & Co	
Western Cooperage Company	
Weston Basket and Barrel Company	
Windler, Geo.	San Francisco
	Ban Flancisco
Dairymen's, Poulterers' and Apiarists' Supplies. Albers, Henry, Company	Ton Angolog
Mammoth Hatchery	
Miller Hive and Box Company	
Simpson, R. A., Manufacturing Company	
	Oakianu
Elevators. Baker Iron Works	Los Angeles
Hammond Elevator Company	
Kelsey & McEvoy	San Francisco
McKain Manufacturing Company	
Otis Elevator Company	
Pogue & Petersen	
Roberts, L. V., Machine Works	
San Francisco Elevator Company	San Francisco
Wells & Spencer Machine Company	San Francisco
Fixtures. Bahr Woodworking Company	San Francisco
Banta, A. J.	Sacramento
Bateman, Wm	San Francisco
Bell & Rosslow	
Braas & Kuhn Company	
Black, A. W., Planing Mill	
Bradford, F. G., Mill Company	
Braendlein, Geo., & Son	
Breuner, John, Company	
Brunswick-Balke-Collender Company	
Bungalow Furniture Manufacturing Company	
Burnett & Sons	
Burnham-Standeford Company	
California Fixture Company	
California Showcase Company	
Chase, S. H., Lumber Company	
City Refrigerator and Fixture Company	
Cresmer Manufacturing Company	
Diamond Patent Showcase Company	_San Francisco
Dillman, J. M.	
East Side Mill and Lumber Company	
Emanuel, L. & E., Inc.	_San Francisco
Enterprise Supply and Manufacturing Company	
Eureka Mill and Lumber Company	
Eureka Planing Mill Company	
Forbes, A. J., & Son	
Franzen, W. F.	San Diego
Fresno Planing Mill Company	
Gilt Edge Cabinet Works	
Gourley, Fred	
Gripton, Walter A	
Gurnee Planing Mill	

Haas Woodworking Company	
Harris & Eyre Company	Los Angeles
Harksel, Julius	San Diego
Hermann & Co.	San Francisco
Hersko, S., & Co	San Francisco
Hertenstein, A. & Son	San Francisco
Home Manufacturing Company	San Francisco
Hubbard & Carmichael Bros.	San Jose
Inlaid Floor Company	San Francisco
Kopp, G. W	Sacramento
Kulchar, S., & Co.	Oakland
Levi, B., Fixture Shop, The	San Francisco
Levin Showcase and Fixture Company	San Francisco
Lodi Mill and Manufacturing Company	
Lorenz, F. A.	San Francisco
Los Angeles Planing Mill Company	Los Angeles
Mahoney, M. F.	Los Angeles
McGiven Cabinet Company	Los Angeles
Meek, T. H., Co	San Francisco
Millard, J. H., & Son	San Francisco
Mitscher, H. & Son	Stockton
Niederer, J. Co	Los Angeles
Ocean Shore Manufacturing Company	
Ostrowski, Frank S. & Son	San Francisco
Pacific Butchers' Supply Company	San Francisco
Pacific Coast Planing Mill Company	
Pendleton, S. H., Lumber and Mill Company	Santa Ana
Pierce, F. J. Co.	
Powell, Robert	
Roberts & Clark	
Rosenzweig, H.	San Francisco
Sacramento Builders' Supply Company	
Schafer, Geo.	
Schemp, J. F. & Co	
Schneider, M. & Sons	
Simmer, John, Co	San Francisco
Sink, Leo	
Southern California Hardwood and Manufacturing Company	
Standard Furniture and Fixture Manufacturing Company	San Francisco
Sterling Showcase Manufacturing Company	Oakland
Swift Bros.	
Townley Mill and Lumber Company	
Turlock Lumber Company	Turlock
Union Supply Company	Monterey
Weber, C. F., & Co	San Francisco
Weber Showcase and Fixture Company	Los Angeles
Western Planing Mill	San Francisco
Western Planing Mill	
Western Woodworking Company	San Francisco
Wilson & Hanson Co	
Frames and Molding. Franklin Street Planing Mill	San Francisco
Green's	Los Angeles
Gage, Harold J	
Kanst Art Company	
Parker, Harold	
Royar Bros.	Log Angeles
Sanborn, Vail & Co.	
Samoun, van & Cu	LOS Augeles

Furniture.	
Allen, Wm. M	Red Bluff
Bailey-Schmitz Company	
Barker Bros., Inc.	
Braas & Kuhn Co	
Black, A. W., Planing Mill	
Braendlein, Geo. & Son	
Breuner, John, Company	
Bungalow Furniture Manufacturing Company	•
Burns, Rodney	
California Mill Company	
California Souvenir Company	
Capital Furniture Manufacturing Company	
Cavanagh Mill and Lumber Company	
Christ, C. H.	
Cleese, John P., Company	
Cottrell, J. A., Molding Mill Company	
Coulter's Rattan Works	
Cowan, H. D.	
Crescent Feather Company	
Emanuel, L. & E., Inc.	
Eureka Mechanical Shop	
Eureka Mill and Lumber Company	
Eureka Sash, Door and Molding Mills	
Eureka Sash, Door and Molding Mills	
Forbes, A. J. & Son	
Frank, J. & Co.	
Franzen, W. F.	
Friedricks, Jos. & Co	
Fuller, Meisner Company	
Furniture Shop, The	
Galley, E. T., Cabinet Company	
Gilt Edge Cabinet Works	
Gripton, Walter A.	
Harris & Eyre Company	
Hawthorne Furniture and Manufacturing Company	
Henderson Manufacturing Company	
Hodgkins & Co.	
Hoey, John & Co.	
Holtzclaw-Stubbs-Shriner Company	
Home Manufacturing Company	
Hubbard & Carmichael Bros.	
Hustler Planing Mill	
Inlaid Floor Company	
Karmel, Marten	
Klingler, G. J.	
Klopstock Bros.	
Lauxen & Catts	
Levi, S. Fixture Shop	
Lodi Mill and Manufacturing Company	Lodi
Lorenz, F. A.	San Francisco
Manhattan Furniture Company	Los Angeles
Marshall & Stearns Company	San Francisco
McGiven Cabinet Company	Los Angeles
McKurty, N. Rattan Company	San Francisco
Millard, J. H. & Son	San Francisco
Mitscher, H. & Son	Stockton
Monrovia Manufacturing Company	Monrovia

Nichols, J. H.	San Jose
Ochlmann, L.	San Francisco
Ovenshire Information Cabinet Company	
Pacific Coast Planing Mill Company	Los Angeles
Pacific Coast Rattan Company	
Pacific Spring Bed Company	
Peerless Manufacturing Company	Oakland
Pomona Planing Mill	
Roether, Charles	Los Angeles
Rother, Emil	San Francisco
Russ Lumber and Mill Company	San Diego
San Francisco Mantel Company	San Francisco
Santa Rosa Manufacturing Company	Santa Rosa
Schneider, M. & Sons	Stockton
Sink, Leo	
Southern California Hardwood and Manufacturing Company	
Sterling Furniture Company	
Stevenson Company	
Thiebaut Bros.	
Townley Mill and Lumber Company	San Francisco
Union Supply Company	monterey
United Studios, Inc.	
Van Vorst & Berman Company	
Veal Reed Chair Company	Los Angeles
Wall Bed and Fixture Company	
Warnholz, Wm. H	San Francisco
Western Planing Mill	
Western Woodworking Company	
Wilson & Hanson Company	Los Angeles
Yamato Co., Inc., The	Los Angeles
Gates and Eencing	
Gates and Fencing.	Tag Angeles
	Los Angeles
Mission Lumber Company	San Francisco
Mission Lumber Company	San Francisco
Mission Lumber Company	San Francisco
Mission Lumber CompanyHandles. Egerer Bros	San Francisco
Mission Lumber Company	San Francisco
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company	San FranciscoLos AngelesLos Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company	San FranciscoLos AngelesLos AngelesSan Francisco
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F.	San FranciscoLos AngelesLos AngelesSan FranciscoLos Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe	Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company	Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S.	Los Angeles San Francisco Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company	Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S.	Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F	Los Angeles San Francisco Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F	Los Angeles San Francisco Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S Salyer-Baumeister Company Whalley, Thomas W Instruments, Professional and Scientific. California Artwood Company	Los Angeles San Francisco Los Angeles South Berkeley
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company	Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company	Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company Levi, S., Fixture Shop	Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles South Berkeley Los Angeles Los Angeles Los Angeles Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company Levi, S., Fixture Shop Pacific Rubber Stamp Company	Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company Levi, S., Fixture Shop Pacific Rubber Stamp Company Sanborn, Vail & Co.	Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles South Berkeley Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company Levi, S., Fixture Shop Pacific Rubber Stamp Company Sanborn, Vail & Co. Wittenberg, Chas.	Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles San Francisco Los Angeles Napa
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company Levi, S., Fixture Shop Pacific Rubber Stamp Company Sanborn, Vail & Co. Wittenberg, Chas. Yucca Wood and Leather Company	Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles San Francisco Los Angeles Napa
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company Levi, S., Fixture Shop Pacific Rubber Stamp Company Sanborn, Vail & Co. Wittenberg, Chas. Yucca Wood and Leather Company Laundry Appliances.	Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles San Francisco Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company California Map Company Levi, S., Fixture Shop Pacific Rubber Stamp Company Sanborn, Vail & Co. Wittenberg, Chas. Yucca Wood and Leather Company Laundry Appliances. Ray, W. S., Manufacturing Company	Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles South Berkeley Los Angeles
Mission Lumber Company Handles. Egerer Bros. Instruments, Musical. Bartlett Music Company Deitemeier Piano Company Emery, C. F. Galleazzi Giuseppe Harris, M. M. Company Pierce, Walter S. Salyer-Baumeister Company Whalley, Thomas W. Instruments, Professional and Scientific. California Artwood Company California Map Company Chipron Stamp Company Levi, S., Fixture Shop Pacific Rubber Stamp Company Sanborn, Vail & Co. Wittenberg, Chas. Yucca Wood and Leather Company Laundry Appliances.	Los Angeles Los Angeles Los Angeles San Francisco Los Angeles San Francisco Los Angeles San Francisco Los Angeles South Berkeley Los Angeles

Machine Parts.

Machine Parts.	
Aermotor Company	
Brown & Dauser Company	
Jackson, Byron Iron Works	Los Angeles
Lauritzen Implement Company	Fresno
Los Angeles Pump Supply Company	
Madsen & Graham Iron Works	
McKain Manufacturing Company	
Pomona Planing Mill	
Press, W. G., Company	Еureка
Reed, W. H., & Co	
Samson Iron Works	
Stillman, R. P.	
Stockton Iron Works	
Stockton Tool Works	
Taylor, A. A., & Son	
Wagner, Jos., Manufacturing Company	San Francisco
Wallace Concrete Machinery Company	Los Angeles
Machinery and Apparatus, Electrical.	
Butte Engineering and Electric Company	San Francisco
Electric Novelty Works	
Farnsworth Electric Works	
Haas Woodworking Company	San Francisco
Matches.	
Independent Match Company	San Francisco
Paper Pulp.	
Floriston Pulp and Paper Company	San Francisco
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Advance Machine Company	Tos Angeles
Baker Iron Works	
Bisch & Salzmann	
Bottomley, C. M	
California Pattern Works	
Capitol Machine Works	
Chicago Pattern Shop	Los Angeles
Dreger, E. F., Pattern Company	
Empire Pattern Works	Oakland
Greenberg's, M., Sons	San Francisco
Haase, A., Inc.	
Los Angeles Pump Supply Company	Los Angeles
Madsen & Graham Iron Works	Los Angeles
McLure & Burton	
Meese & Gottfried Company	
Moore & Scott Iron Works	San Francisco
Newman, J.	Oakland
Phillips Iron Works	
Reed, W. H., & Co	San Francisco
Sacramento Pattern Shop	Los Angeles
Samson Iron Works	Stockton
Santa Rosa Manufacturing Company	Santa Rosa
Smith, J. C., Pattern Works	
Standard Foundry, Inc.	
Star Pattern Shop	
Stockton Iron Works	
Thomas & Carlson	
Union Iron Works	
Up-to-Date Pattern Company	Los Angeles
Walker & Hener	Los Angeles San Francisco
	Los Angeles San Francisco

Planing Mill Products.

Planing Mill Products.	
Acme Planing Mill Products.	San Francisco
American Floor Company	
Anaheim Planing Mill	
Anderson Bros. Planing Mill and Manufacturing Company	
Antioch Lumber Company	
Banta, A. J.	
Bateman, Wm.	
Bell & RosslowBinet Bros.	
Blackman, E. L., Company	
Bradford, F. G., Mill Company	
Braendlein, George & Son	
Bruce Lumber and Mill Company	
Breuner, John, Company	
Buell, G. A., Company	
Burnett & Sons	Sacramento
Burnham-Standeford Company	
California Mill Company	
California Planing Mill and Lumber Company	
California Standard Planing Mill Company	Ookland
Capital Furniture Manufacturing Company	
Central Lumber Company	Oakland
City Mill and Manufacturing Company	Log Angeles
Clay Street Planing Mill	Angeles
Coöperative Hardwood Floor Company	Tog Angeles
Corlett, W. H.	Los Angeles
Cotton T. A. Maldin Mill Common	Napa
Cottrell, J. A., Molding Mill Company Cresmer Manufacturing Company	
Crown City Manufacturing Company	Dansine
Dahan & Crossile	Pasagena
Dobson & Creagmile	Berkeley
Dreger, E. F., Pattern Company	San Francisco
East Side Mill and Lumber Company	Santa Cruz
Emanuel, L. & E., Inc.	
Empire Planing Mill	
Engstrum, F. O., Company	
Enterprise Supply and Manufacturing Company, Inc.	
Eureka Mechnical Shop	
Eureka Mill and Lumber Company	
Eureka Planing Mill CompanyEureka Sash, Door and Molding Mills	Los Angeles
Eureka Sash, Door and Moldin, Mills	Lureka
Eureka Sash, Door and Molding Mills	
Franklin Street Planing MillFresno Flume and Lumber Company	
Fuller, Meisner Company	
Galley, E. T., Cabinet Company	
Graves, Frank, Sash, Door and Mill CompanyGriffith Lumber Company	
Hardwood Interior Company	
Harris & Eyre Company	
Hayward Lumber Company	
Herrings Mill, Inc.	San Francisco
Hillmost Company	
Hillcrest Company	
Hodgkins & Company	
Hoerl, J. F.	
Holden-Deuprey Company	
Hughes Manufacturing and Lumber CompanyHumboldt Milling Company	Los Angeles
Hustler Planing Mill	TOOOLS Tredisings
L	0.1

Inlaid Floor Company	San Francisco
Kopp, G. W	Sacramento
Kulchar, S., & Co.	Oakland
Lazier, S. W., Planing Mill	Santa Barbara
Liefer Mill and Supply Company	
Lodi Mill and Manufacturing Company	
Loma Prieta Lumber Company	Wetgonville
Los Angeles Planing Mill Company	Log Angeles
Madary's Planing Mill	Troops
Martin, Geo. S.	
Marysville Mill and Manufacturing Company	Morreville
MacCully, Judson	Ookland
Melrose Lumber and Supply Company	Dukiano
Miller, A. W., Manufacturing Company	Discould
Myzelle & Imhoff Company	
Niederer, J., Company	
Niles Lumber and Milling Company	
Ocean Shore Manufacturing Company	
Ochlmann, L.	
Pacific Coast Planing Mill Company	
Pacific Manufacturing Company	
Pacific Portable Construction Company	
Pacific Sash and Door Company	
Parkinson, J. F., Company	
Pasadena Manufacturing Company	
Pendleton, S. H., Lumber and Mill Company	
Plant, Wm., & Co.	San Francisco
Pomona Planing Mill	
Powell, Robert	
Description of the state of the	
Premus, W. C., Planing Mill	
Redwood Manufacturers' Company	Black Diamond
Redwood Manufacturers' Company	Black Diamond Oakland
Redwood Manufacturers' CompanyRedwood Manufacturers' CompanyReinhardt Lumber and Planing Mill Company	Black Diamond Oakland San Francisco
Redwood Manufacturers' Company	Black Diamond Oakland San Francisco San Francisco
Redwood Manufacturers' Company	Black Diamond Oakland San Francisco San Francisco Stockton
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company	Black Diamond Oakland San Francisco San Francisco Stockton San Diego
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J.	Black Diamond Oakland San Francisco San Francisco Stockton Hayward
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company	Black Diamond Oakland San Francisco San Francisco Stockton Hayward
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company	Black Diamond Oakland San Francisco San Francisco Stockton Hayward Sacramento
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill	Black Diamond Oakland San Francisco San Francisco San Diego Hayward Sacramento Sacramento Salinas
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill	Black DiamondOaklandSan FranciscoStocktonSan DiegoHaywardSacramentoSalinasSan Diego
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company	Black Diamond Oakland San Francisco San Francisco Stockton Hayward Sacramento Sacramento Sacramento San Diego San Diego
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company	Black Diamond Oakland San Francisco San Francisco Stockton Hayward Sacramento Sacramento Sacramento San Diego San Jose San Jose
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill San Diego Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons	Black Diamond Oakland San Francisco San Francisco Stockton Hayward Sacramento Sacramento Salinas San Diego San Jose San Jose Santa Rosa
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill San Diego Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros.	Black DiamondOaklandSan FranciscoStocktonSan DiegoHaywardSacramentoSalinasSan DiegoSan JoseSan RosaStocktonRedlands
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Schneider, M. & Sons Seymour Bros. Sierra Building Company	
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company	Black Diamond Oakland San Francisco San Francisco San Diego Hayward Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill	Black Diamond Oakland San Francisco San Francisco San Francisco San Diego Hayward Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company	Black Diamond Oakland San Francisco San Francisco San Francisco San Diego Hayward Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill San Diego Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Swift Bros.	Black Diamond Oakland San Francisco San Francisco San Francisco San Diego Hayward Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco San Francisco Marysville
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill San Diego Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Swift Bros. Taylor, A. A. & Son	Black Diamond Oakland San Francisco San Francisco San Francisco Stockton Hayward Sacramento Sacramento Sacramento San Diego San Jose San Jose And Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco San Francisco San Francisco
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill San Diego Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Sierra Nevada Wood and Lumber Company Stockton, A. L., Lumber Company Swift Bros. Taylor, A. A. & Son Townley Mill and Lumber Company	Black Diamond Oakland San Francisco San Francisco San Francisco Stockton Hayward Sacramento Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco Marysville Stockton San Francisco
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill San Diego Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Swift Bros. Taylor, A. A. & Son Townley Mill and Lumber Company Turlock Lumber Company	Black Diamond Oakland San Francisco San Francisco San Francisco San Francisco Hayward Sacramento Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco Marysville Stockton San Francisco Turlock
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Spencer Street Planing Mill Stockton, A. A. & Son Taylor, A. A. & Son Townley Mill and Lumber Company Union Planing Mill	Black Diamond Oakland San Francisco San Francisco San Francisco San Diego Hayward Sacramento Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco Marysville Stockton San Francisco Turlock Stockton
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Swift Bros. Taylor, A. A. & Son Townley Mill and Lumber Company Union Planing Mill Union Supply Company Union Supply Company	Black Diamond Oakland San Francisco San Francisco San Francisco San Diego Hayward Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco Marysville Stockton San Francisco Turlock Stockton Stockton Stockton Stockton Stockton Stockton
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Swift Bros. Taylor, A. A. & Son Townley Mill and Lumber Company Turlock Lumber Company Union Planing Mill Union Supply Company Valencia Planing Mill Union Supply Company Valencia Planing Mill	Black Diamond Oakland San Francisco San Francisco San Francisco San Diego Hayward Sacramento Salinas San Diego San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco Marysville Stockton San Francisco Marysville Stockton San Francisco San Francisco Marysville San Francisco San Francisco Marysville San Francisco San Francisco
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Swift Bros. Taylor, A. A. & Son Townley Mill and Lumber Company Union Planing Mill Union Supply Company Valencia Planing Mill Vance Redwood Lumber Company Valencia Planing Mill Vance Redwood Lumber Company	Black Diamond Oakland San Francisco San Francisco San Francisco San Diego Hayward Sacramento Salinas San Diego San Jose San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco Marysville Stockton San Francisco Marysville Stockton San Francisco Marysville Stockton San Francisco San Francisco Marysville San Francisco San Francisco San Francisco
Redwood Manufacturers' Company Redwood Manufacturers' Company Reinhardt Lumber and Planing Mill Company Richardes Bros. Roberts & Clark Russ Lumber and Mill Company Russell, Fred J. Sacramento Builders' Supply Company Sacramento Planing Mill and Furniture Company Salinas Planing Mill San Diego Planing Mill Santa Clara Valley Mill and Lumber Company Santa Rosa Manufacturing Company Schneider, M. & Sons Seymour Bros. Sierra Building Company Sierra Nevada Wood and Lumber Company Spencer Street Planing Mill Stockton, A. L., Lumber Company Swift Bros. Taylor, A. A. & Son Townley Mill and Lumber Company Turlock Lumber Company Union Planing Mill Union Supply Company Valencia Planing Mill Union Supply Company Valencia Planing Mill	Black Diamond Oakland San Francisco San Francisco San Francisco Stockton Hayward Sacramento Sacramento Salinas San Diego San Jose San Jose Santa Rosa Stockton Redlands Pacific Grove Hobart Mills San Francisco Marysville Stockton San Francisco Turlock Stockton Monterey San Francisco San Francisco

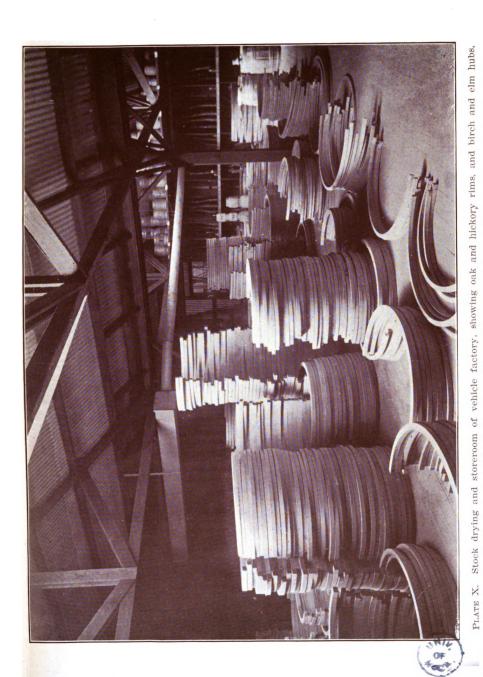
Waas, Henry, Company	
Western Planing Mill	
Western Planing Mill	
White, D. G	
Work, T. A., Company	Pacific Grove
Printing Materials.	
Aristo Engraving Company	Los Angeles
Bryan-Garnier Company	Los Angeles
Los Angeles Engraving Company	Los Angeles
Riley-Moore Engraving Company	Los Angeles
Star Engraving Company	Los Angeles
Pulleys and Conveyors.	
Pulleys and Conveyors. Acme Planing Mill	San Francisco
Pumps.	
Jackson, Byron Iron Works	Los Angeles
Rose, T. T., & Co	Alameda
Wilson, Richard F	Stockton
Refrigerators and Kitchen Cabinets.	
Brunswick-Balke-Collender Company	Los Angeles
City Refrigerator and Fixture Company	
Golden Gate Refrigerator Company	
Jones-Behrens Company	
Mitscher, H., & Son	Stockton
Pacific Coast Cork and Insulating Company	San Francisco
Sacramento Builders' Supply Company	
Santa Rosa Manufacturing Company	
Schafer, Geo.	Banta Rosa
Rollers—Shade and Map.	Tom Ammalom
	Los Angeles
Saddles and Harness.	•
California Saddle and Tree Company	Petaluma
California Saddle and Tree Company	Petaluma
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles
Sash, Doors, Blinds and General Millwork.	Los Angeles
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Los Angeles Los Anaheim Los San Francisco
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company Anaheim Planing Mill	Los Angeles Los Angeles Los Angeles Los Anaheim Los Antioch
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company Anaheim Planing Mill Anderson Bros. Planing Mill and Manufacturing Company Antioch Lumber Company Banta, A. J. Bisbee-Fishburn Company Bisch & Salzmann Blomberg & Eck	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles San Francisco
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company Anaheim Planing Mill Anderson Bros. Planing Mill and Manufacturing Company Antioch Lumber Company Banta, A. J. Bisbee-Fishburn Company Bisch & Salzmann Blomberg & Eck	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles San Francisco Long Beach
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles San Francisco Long Beach
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles Tung Beach Fullerton San Francisco
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles Francisco Long Beach Fullerton San Francisco
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company Anaheim Planing Mill Anderson Bros. Planing Mill and Manufacturing Company Antioch Lumber Company Banta, A. J. Bisbee-Fishburn Company Bisch & Salzmann Blomberg & Eck Boller, John A. M. Benham, J. B. Brown & Dauser Company Buell, G. A., Company Burnett & Sons Burnham-Standeford Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Beach Francisco San Francisco San Francisco Oakland
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company Anaheim Planing Mill Anderson Bros. Planing Mill and Manufacturing Company Antioch Lumber Company Banta, A. J. Bisbee-Fishburn Company Bisch & Salzmann Blomberg & Eck Boller, John A. M. Benham, J. B. Brown & Dauser Company Buell, G. A., Company Burnham-Standeford Company California Wood Turning Works	Los Angeles
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company Anaheim Planing Mill Anderson Bros. Planing Mill and Manufacturing Company Antioch Lumber Company Banta, A. J. Bisbee-Fishburn Company Bisch & Salzmann Blomberg & Eck Boller, John A. M. Benham, J. B. Brown & Dauser Company Burll, G. A., Company Burnham-Standeford Company California Wood Turning Works Camm & Hedges Company	Los Angeles
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Petaluma San Jose
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Petaluma San Jose Los Angeles
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Petaluma San Jose Los Angeles Eureka
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Petaluma San Jose Los Angeles Eureka Riverside
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Petaluma Petaluma Los Angeles Los Angeles Los Angeles Los Angeles Los Angeles Eureka Riverside
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Petaluma San Jose Los Angeles Los Angeles Angeles Sacramento Oakland Petaluma San Jose Los Angeles Los Angeles Angeles Sacramento
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Fullerton San Francisco Sacramento Oakland Petaluma San Jose Los Angeles Eureka Riverside Pasadena San Francisco
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Detaluma San Jose Los Angeles Eureka Riverside Pasadena San Francisco Long Beach
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Long Beach Fullerton San Francisco Oakland Oakland Dakland Petaluma San Jose Los Angeles Eureka Riverside Pasadena San Francisco Long Beach Berkeley Santa Cruz
Sash, Doors, Blinds and General Millwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Sacramento Oakland Oakland Petaluma San Jose Los Angeles Eureka Riverside Pasadena San Francisco Sacramento Cakland Oakland Petaluma San Jose Los Angeles Eureka Riverside Pasadena San Francisco Long Beach Berkeley Sant Cruz
Sash, Doors, Blinds and General Miliwork. Algoma Lumber Company	Los Angeles Anaheim San Francisco Antioch Sacramento Los Angeles Los Angeles Los Angeles Los Angeles San Francisco Sacramento Oakland Oakland Petaluma San Jose Los Angeles Eureka Riverside Pasadena San Francisco Sacramento Cakland Oakland Petaluma San Jose Los Angeles Eureka Riverside Pasadena San Francisco Long Beach Berkeley Sant Cruz

Forting T. O. Company	T A
Engstrum, F. O., CompanyEnterprise Supply and Manufacturing Company	Stockton
Eureka Mechanical Shop	
Eureka Mill and Lumber Company	
Eureka Planing Mill Company	
Eureka Sash, Door and Molding Mills	
Eureka Sash, Door and Molding Mills	
Flynn, J. F.	
Forbes, A. J. & Son	
Fresno Planing Mill Company	
Frey, J. W	Los Angeles
Graves, Frank, Sash, Door and Mill Company	Los Angeles
Gurnee Planing Mill	Hanford
Harris & Eyre Company	Los Angeles
Hayes, W. A	
Hertenstein, A., & Son	
Hihn-Hammond Lumber Company	Santa Cruz
Hillcrest Company	
Hipolito Screen and Sash Company	
Hodgkins & Co.	
Hoerl, J. F.	
Holden-Deuprey Company	
Holmes Planing Mill Company	
Hubbard & Carmichael Bros.	
Hughes Manufacturing and Lumber Company	
Hustler Planing Mill	
Klemm, J. G	
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Kunny BrosLamoine Lumber and Trading Company	
Lazier, S. W., Planing Mill	
Liefer Mill and Supply Company	
Loma Prieta Lumber Company	
Loyd, C. E.	
Los Angeles Planing Mill Company	Los Angeles
Martin, Geo. S.	
Marysville Mill and Manufacturing Company	
McKee Bros.	
Melrose Lumber and Supply Company	
Miller, A. W., Manufacturing Company	
Myzelle & Imhoff Company	San Bernardino
National Lumber Company	
Nichols, J. H.	
Pacific Manufacturing Company	
Pacific Portable Construction Company	
Pacific Sash and Door Company	
Panama Woodworking Company	
Parkinson, J. F., Company	
Pasadena Manufacturing Company	
Pierce, F. J., Company	
Porter, W. F., Inc.	
Redwood Manufacturers' Company	
Redwood Manufacturers' CompanyReinhart Lumber and Planing Mill Company	
Roberts & Clark	
Rother, Emil	
Russ Lumber and Mill Company	
Sacramento Builders' Supply Company	
Sacramento Planing Mill and Furniture Company	
Salinas Planing Mill	
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Sanborn & Stewart	
Sanborn, Vail & Co.	Los Angeles
San Francisco Mantel Company	San Francisco
Santa Clara Valley Mill and Lumber Company	San Jose
Santa Rosa Manufacturing Company	Santa Rosa
San Vicente Lumber Company	
Schussler Bros.	
Seymour Bros.	
Sierra Building Company	Pacific Grove
Sierra Nevada Wood and Lumber Company	Hobart Mills
Sinkinson, J. H., & Sons	Santa Cruz
Smith, C. A., Lumber Company	
Soule Reversible Window Company	San Francisco
Southern California Hardwood and Manufacturing Company	Los Angeles
Standard Door and Sash Company	
Standard Lumber Company	
Standard Screen and Manufacturing Company	
Stockton, A. L., Lumber Company	
Swift Bros.	Marvsville
Thatcher Lumber Company	
Thurman Door Company	
Townley Mill and Lumber Company	
Turlock Lumber Company	Turlock
Union Blind and Ladder Company	Oakland
Union Planing Mill	Stockton
Valencia Planing Mill	San Francisco
Vance Redwood Lumber Company	
Vance Redwood Lumber Company	
Visalia Planing Mill	
Waas, Henry, Company	
Wagner & Lee	San Francisco
Weed Lumber Company	
Western Planing Mill	
Western Planing Mill	
Western Woodworking Company West Side Planing Mill	
White, D. G.	
Wilson, David & Maguire	
Ship and Boat Building.	o 10
Banner Island Boat Works	San Francisco
Beetle, J. C.	Elmnurst
Itendixen, H. D., Shipbuilding Company	
Bowes & Andrews	
Brundage Paint and Construction Company	Terminal Island
California Mill Company	San Francisco
California Navigation and Improvement Company	
Cryer, Wm.	
East Side Mill and Lumber Company	
Fellows, Joe, Yacht and Launch Company	
Grant, J., Shipyard	
Hardwood Planing Mill Company	
Jarvis Bros. Shipyard	
Jones-Behrens Company	
Keenan, Thos. R.	San Francisco
Larson, Al.	San Francisco _East San Pedro
Larson, Al. Moore & Scott Iron Works	San Francisco _East San Pedro San Francisco
Larson, Al. Moore & Scott Iron Works Munder, Wm., & Sons	San Francisco _East San PedroSan FranciscoSan Francisco
Larson, Al. Moore & Scott Iron Works Munder, Wm., & Sons Schultze-Robertson-Schultze	East San Francisco East San Pedro San Francisco San Francisco San Francisco
Larson, Al. Moore & Scott Iron Works Munder, Wm., & Sons Schultze-Robertson-Schultze	East San Francisco East San Pedro San Francisco San Francisco San Francisco
Larson, Al. Moore & Scott Iron Works Munder, Wm., & Sons	East San Francisco East San Pedro San Francisco San Francisco San Francisco

Thomsen, H. C.	San Francisco
Twigg, John, & Sons	San Francisco
Union Iron Works	
Western Boat Works	Long Beach
Wilmington Transportation Company	San Pedro
Signs.	
Carr, F. L.	Pasadena
Dromgold Sign Company	Los Angeles
Hernich, Ed R.	Los Angeles
Sporting and Athletic Goods.	
Brunswick-Balke-Collender Company	Los Angeles
California Artwood Company	Los Angeles
California Souvenir Company	Los Angeles
California Wood Turning Works	Oakland
Pacific Coast Billiard Table Company	Los Angeles
Tanks.	-
Tanks. Herbert, Vogel & Mark Co	San Francisco
Jones, J. R. L.	
Kopp, G. W	Sacramento
Lawson Bros.	San Francisco
Niles Lumber and Milling Company	Niles
Pacific Coast Cork Insulating Company	San Francisco
Pacific Coast Planing Mill Company	Los Angeles
Pacific Tank and Pipe Company	San Francisco
Pendleton, S. H., Lumber and Mill Company	Santa Ana
Prahser, W. B.	Stockton
Redwood Manufacturers' Company	Oakland
Redwood Manufacturers' Company	Black Diamond
Rose, T. T., & Co	Alameda
Russ Lumber and Mill Company	
Simpson, R. A., Manufacturing Company	
Sink, Leo	
Stillman, R. P.	
Turlock Lumber Company	
Wilson, Richard F	
Windler, Geo.	
Trunks and Vallses.	
Burroughs-White Trunk Company	
Crown City Trunk Factory	
Enterprise Trunk Factory	
Featherweight Trunk Company	
Hirschfelder & Meaney	
Malm, C. A., & Co.	
Matthews, F. B., Trunk Factory	
Mission Trunk Factory	
Oakland Trunk Factory	
Pacific Trunk Factory	
Racine-Los Angeles Trunk Company	
Reliable Trunk Factory	Tos Angeles
San Diego Trunk Company	San Diago
Southern California Box Company	
•	Mos migeles
Vehicles and Vehicle Parts.	Angheim
Anderson & Buffhers	Son Francisco
Anderson & Buffham Anderson & Company	Son Francisco
Anderson & Company	Ban riancisco
Artono T & Con	San Tosa
Arth Coo V	San Jose
Arth, Geo. V	San Jose Oaklar
Artana, L., & SonArth, Geo. VAuto Repair Company	San Jose Oaklar

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Auto Top Manufacturing Company	
Beacon Auto-Body Company	
Beecraft, A. T	
Bowman Carriage Company	
Broedel, M.	
Brusch, C. H.	
Bussey & Scarlett Company	Now Monterey
Cappuro, Angelo	
Carmean Buggy Company	
Cather & Kennedy Manufacturing Company	
Central Avenue Carriage Works	Los Angeles
Chabot, J. & Son	
Chanslor & Lyon Motor Supply Company	
City Front Wagon Works	
Compton & Warnock	
Consolidated Vehicle Company	
Cooper, T. J.	
Courtney, C. D.	
Crosetti & Co.	
Crowe & Hasselbach	
Crown Carriage Company	
Darling, P. P.	Monterey
Davenport, L. M., Company	
Dillman, I. M.	
Dudley, E. C.	San Francisco
Dumont, Chas. A.	
Durocar Manufacturing Company	
Earl Automobile Works	
Eureka Carriage Works	
Falkenstein, C.	
Farrell, Thomas J.	Los Angeles
Fleming, Chas. F.	
Frediane, Ditano & Biagni	
Fry, H. P.	
Gaehwiler, John & SonGheffoli, B., & Co	Oon Francisco
Ghiotto, Andrew G.	Can Francisco
Grave, B., Company	San Francisco
Greeninger's, A., Sons	San Jose
Griffith Lumber Company	Santa Ana
Guidi, A., & Co.	
Hamelin, Wm.	Oakland
Hardwood Planing Mill Company	San Jose
Henderson, M. P. & Son	Stockton
Herold, Chas.	San Francisco
Hustler Planing Mill	$_{}$ Redlands
Imperial Carriage Works	Long Beach
Jaquith, E. J.	Los Angeles
Jens, Wm.	San Francisco
Justice, J. B.	Los Angeles
Kaeppler Warren Company	Los Angeles
Keller, J. W	San Francisco
Killeen & Gratton	San Francisco
Kleiber & Co	San Francisco
Klein, Chas. & Co.	San Francisco
Larkins & Co	San Francisco
Larsen & Krogh	Fresno
Lauritzen Implement Company	Fresho
Lembi & PetriLewis, ThomasDigitized by	San Francisco
Lewis, Thomas Liquized by	ZIZZZSan Francisco



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Libbey, Chas. A.	Stockton
Lloyd's Carriage Works	
Lodi Mill and Manufacturing Company	Lodi
Los Angeles Carriage Works	
Luken's Carriage Works	
Marcotti, P. F.	
Market Carriage Works	
Maxey, J. E.	
Mehegan, P. J.	
Meister, A. & Sons Co.	
Mitchell, J. H.	
Modern Vehicle Company	
Moore, A. D.	
Morgan, W. & Co.	
Nielson, John I.	
Northey, N. S.	
Nugent Covey Wagon Company	
Oakland Wagon Works	
Pacific Coast Auto Top Company	
Pearson, O. W.	
Peters & Hubert	
Pierotti, Joseph, & Sons Company	
Pike Automobile and Wagon Works	Domone
Ragan, J. W.	
Rentschler, F. J.	San Francisco
Reynolds, J. J.	Log Angolog
S. J. S. Co	
Santa Cruz Carriage Works	Santa Cruz
Scheid, Joseph W	
Schelhert & Scannavano Company	San Francisco
Schelbert & Scannavano Company	
Sohst Carriage Company	Oakland
Sohst Carriage CompanySpinney & Oughin	Oakland San Francisco
Sohst Carriage CompanySpinney & OughinStandard Carriage Works	Oakland Can Francisco Can Angeles
Sohst Carriage CompanySpinney & OughinStandard Carriage WorksStandard Wagon Works	Oakland San Francisco Los Angeles Los Angeles
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Sohst Carriage Company Spinney & Oughin Standard Carriage Works Standard Wagon Works Steacy, W. Stearns & Harray Sullivan, Wm. I. Sunset Carriage Factory Thomson Carriage Company Thomson Graf Elder Company Tremain, E. E. Truscott, A. & Son Vallejo Carriage Works Vetter, Aug. & Son Waterhouse & Lester Company Waterhouse & Lester Wertsch, Wm., Company Western Wagon Shop Wheeler, F. W.	Oakland San Francisco Los Angeles Los Angeles Los Angeles Can Francisco San Francisco Stockton Stockton Stockton Vallejo San Francisco San Francisco San Francisco San Francisco San Francisco Los Angeles Oakland
Sohst Carriage Company Spinney & Oughin Standard Carriage Works Standard Wagon Works Steacy, W. Stearns & Harray Sullivan, Wm. I. Sunset Carriage Factory Thomson Carriage Company Thomson Graf Elder Company Tremain, E. E. Truscott, A. & Son Vallejo Carriage Works Vetter, Aug. & Son Waterhouse & Lester Company Waterhouse & Lester Wertsch, Wm., Company Western Wagon Shop Wheeler, F. W. Wilbert, M. L. & Sons	Oakland San Francisco Los Angeles Los Angeles Los Angeles Can Francisco San Francisco San Francisco Stockton Stockton Vallejo San Francisco San Francisco San Francisco San Francisco Los Angeles Oakland San Francisco
Sohst Carriage Company Spinney & Oughin Standard Carriage Works Standard Wagon Works Steacy, W. Stearns & Harray Sullivan, Wm. I. Sunset Carriage Factory Thomson Carriage Company Thomson Graf Elder Company Tremain, E. E. Truscott, A. & Son Vallejo Carriage Works Vetter, Aug. & Son. Waterhouse & Lester Company Waterhouse & Lester Wertsch, Wm., Company Western Wagon Shop Wheeler, F. W. Wilbert, M. L. & Sons Work, T. A., Company	Oakland San Francisco Los Angeles Los Angeles Los Angeles Lodi Oakdale San Francisco San Francisco Stockton Stockton Vallejo San Francisco San Francisco San Francisco Los Angeles Oakland San Francisco
Sohst Carriage Company Spinney & Oughin Standard Carriage Works Standard Wagon Works Steacy, W. Stearns & Harray Sullivan, Wm. I. Sunset Carriage Factory Thomson Carriage Company Thomson Graf Elder Company Tremain, E. E. Truscott, A. & Son Vallejo Carriage Works Vetter, Aug. & Son Waterhouse & Lester Company Waterhouse & Lester Wertsch, Wm., Company Western Wagon Shop Wheeler, F. W. Wilbert, M. L. & Sons Work, T. A., Company Zerry Bros.	Oakland San Francisco Los Angeles Los Angeles Los Angeles Lodi Oakdale San Francisco San Francisco Stockton Stockton Vallejo San Francisco San Francisco San Francisco Los Angeles Oakland San Francisco
Sohst Carriage Company Spinney & Oughin Standard Carriage Works Standard Wagon Works Steacy, W. Stearns & Harray Sullivan, Wm. I. Sunset Carriage Factory Thomson Carriage Company Thomson Graf Elder Company Tremain, E. E. Truscott, A. & Son Vallejo Carriage Works Vetter, Aug. & Son Waterhouse & Lester Company Waterhouse & Lester Wertsch, Wm., Company Western Wagon Shop Wheeler, F. W. Wilbert, M. L. & Sons Work, T. A., Company Zerry Bros.	Oakland San Francisco Los Angeles Los Angeles Lodi Oakdale San Francisco San Francisco San Francisco Stockton Stockton Stockton Stockton Stockton Stockton Lodi Oakdale San Francisco San Francisco San Francisco San Francisco San Francisco Los Angeles Oakland San Francisco Pacific Grove Los Angeles
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Sohst Carriage Company Spinney & Oughin Standard Carriage Works Standard Wagon Works Steacy, W. Stearns & Harray Sullivan, Wm. I. Sunset Carriage Factory Thomson Carriage Company Thomson Graf Elder Company Tremain, E. E. Truscott, A. & Son Vallejo Carriage Works Vetter, Aug. & Son Waterhouse & Lester Company Waterhouse & Lester Wertsch, Wm., Company Western Wagon Shop Wheeler, F. W. Wilbert, M. L. & Sons Work, T. A., Company Zerry Bros. Wood Carvings. Beregsasy, J. California Grill Works	Oakland San Francisco Los Angeles Los Angeles Los Angeles Lodi Oakdale San Francisco San Francisco Stockton Stockton Stockton Vallejo San Francisco San Francisco San Francisco Los Angeles Los Angeles Los Angeles Los Angeles San Francisco
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Woodenware and Novelties.

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Anchor Tent and Awning Factory	
Atkinson, Geo. F.	
Bradford, F. G., Mill Company	San Francisco
Bruce Lumber and Mill Company	Berkeley
Burns, RodneyCalifornia Artwood Company	Eureka
California Barrel Company	Los Angeles
California Souvenir Company	Sau Brancisco
California Standard Planing Mill Company	Los Angeles
California Woodturning Works	Oakland
Campbell, O. A.	Ton America
Cavanagh Mill and Lumber Company	Dotalumo
Daehler Novelty Company	
Driver, Aber & Co	Can Loonday
Eagle Box and Manufacturing Company	Oakland
Edmunds, H. H. & Son	on Tage
Fishbeck, C. W.	Pagadana
Flynn, J. F.	
Fresno Flume and Lumber Company	
Fresno Tent and Awning Company	
Henderson Manufacturing Company	Orbland
Hertenstein, A. & Son	Con Francisco
Hoegee, Wm. H. Co., Inc., The	Tan Annalan
Hoerl, J. F.	Stockton
Humboldt Cooperage Company	Arcata
Jones, J. R. L.	
King Advertising and Sign Company	
Kopp, G. W.	Sacramento
Larsan Ladder Company	
Lee, Fred A.	
Levi, B., Fixture Shop, The	
Lorens, F.	
Los Angeles Ladder Company	
Mayers, T. & J.	san Francisco
Mellus Bros. & Co.	
Miller Hive and Box Company	
Mission Lumber Company	
Muhs & Lochbaum Company	
National Tent and Awning CompanyPacific Novelty Company	L - Angeles
Pacific Tent and Awning Company	San Francisco
Plummer, W. A., Manufacturing Company	San Francisco
Pomona Ladder Company	Pomona
Royar & Nughba	
Russell, Fred J.	
Sanborn, Vail & Co.	
Sinkinson, J. H. & Sons	
Spencer Street Planing Mill	
Stockton, A. L., Lumber Company	San Francisco
Sun Tent and Awning Company	
Swanfeldt Tent and Awning Company	
Thoms Awning Company	
Union Blind and Ladder Company	
Valencia Street Planing Mill	
Waggoner Extension Ladder Company	
Wise & Downie	
Woodstone Manufacturing Company	
Woodstone Manufacturing Company	Los Angeles
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